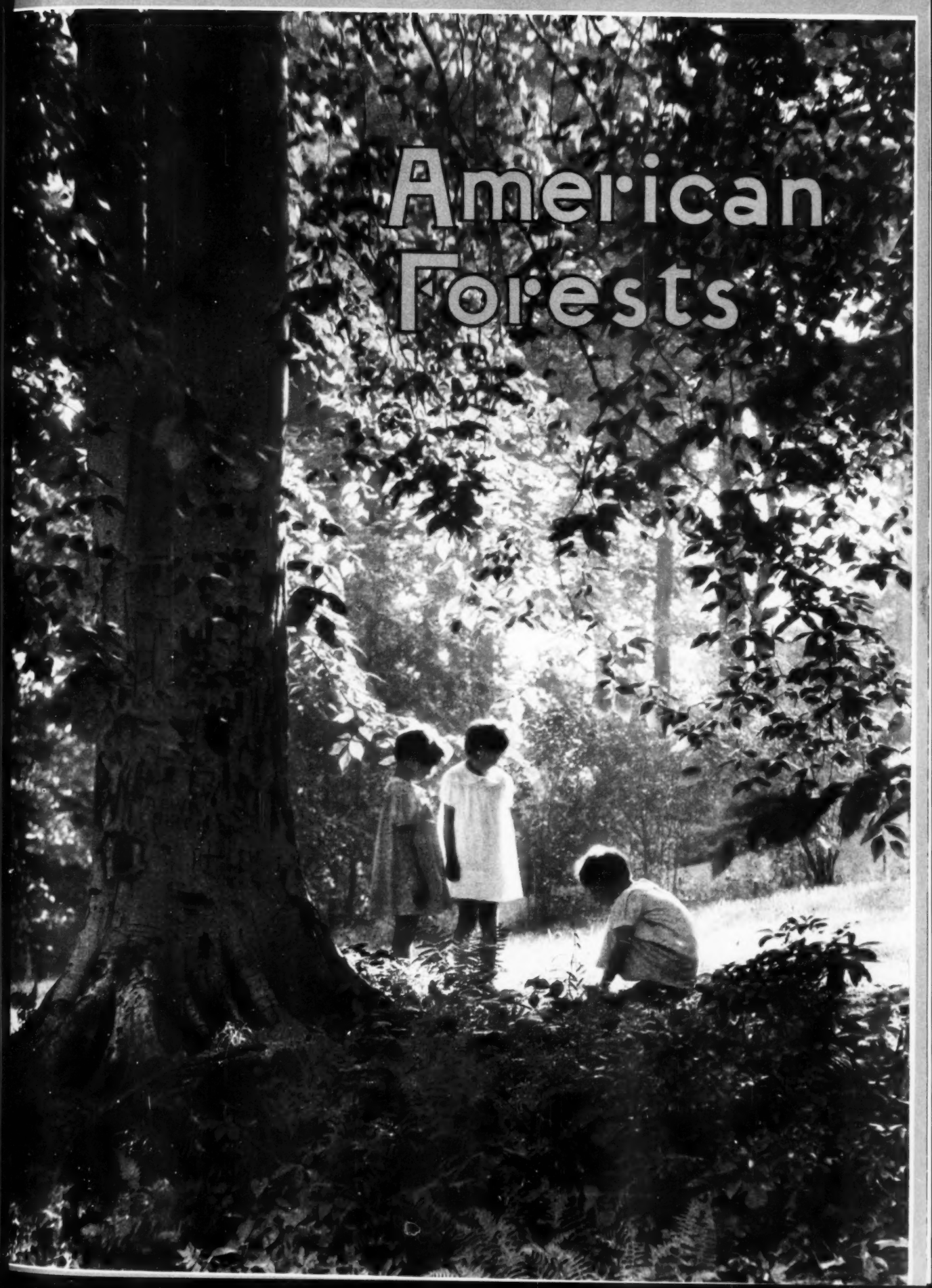

American
Forests

AWAY FROM THE HEAT AND HURRY OF THE CITY

Well-known to the city dweller is the recurrent longing for green fields and growing things. For the peace and comfort of a house by the side of a quiet road. Where the children may find greater health and safety. Where the air is fresh and clean and tall trees shade the day. The telephone has helped to make that dream come true for countless men and women.

Long miles may separate your office from your home, yet you are never far away. It takes but a moment for you to call your wife or child. And they have but to lift the receiver to be in touch with you, with friendly neighbors, with guardians of their welfare.

Telephone service like this is the result of years of co-ordinated effort by the Bell System. Bell Telephone Laboratories contribute their research and engineering. Western Electric its manufacturing, purchasing and distributing. The twenty-four regional telephone companies, with the assistance of the American Telephone and Telegraph Company, see to it that the latest improvements in the art are made available to all.

Because of this unified plan, today's telephone service brings families closer — friends nearer. It makes homes safer — life fuller.

BELL TELEPHONE SYSTEM

Entered as second-class matter at the Post-Office at Washington, D. C., under the Act of March 3, 1879. Acceptable for mailing at special rate of postage provided in Section 1103, Act of October 3, 1917, authorized July 10, 1918. Additional Entry at Baltimore, Md., December 29, 1931.

AMERICAN FORESTS

OVID BUTLER, Editor
L. M. CROMELIN and ERLE KAUFFMAN, Assistant Editors

CONTENTS FOR JULY, 1935

Vol. 41 ◆ ◆ ◆ No. 7

THE COVER—"Our Beech"
Photograph by BERT MCFEELY—Winner of Pennsylvania State Award in the 1934 Competition for Beautiful Photographs of Trees.

TOWARD LIFE
Poem by W. W. CHRISTMAN 306
Illustrated by Ernest Williams

ARE THE COLUMBIA RIVER SALMON DOOMED?
By LAWRENCE E. GRIFFIN 307

THE HOUR BEFORE DAWN
By W. H. BOLLES 310

THE BIG BEND OF THE RIO
By ERLE KAUFFMAN 313

I'VE HEARD THEM TALKING
By ARCHIBALD RUTLEDGE 317

UNIQUE NATURE TRAILS
By MARY E. PASCO 320

DRUGS FROM THE FOREST
By LOUIS E. WISE 322

EDITORIAL
With or Without Codes—Carry On! 325

ALL-WOOD HOUSES BY MACHINERY 326

LIGHT IN FOREST PHOTOGRAPHY
By RAYMOND A. WOHLRABE 328

HOUR OF PROMISE
Poem by ROWENA ARTHUR MILLS 328

FIELD AND FOREST FOR BOYS AND GIRLS
Mickie, The Marvelous Mink
By LEAH F. COLLINS 330

TREES AND THEIR USES
No. 7—Willow Oak
Drawn by CALVIN FADER 331

WILLOW OAK (Tree Series) 332

AROUND THE STATES 334

ASK THE FORESTER 339

BOOK REVIEWS 342

CONSERVATION CALENDAR IN CONGRESS 344

FORESTRY IN CONGRESS
By G. HARRIS COLLINGWOOD 345

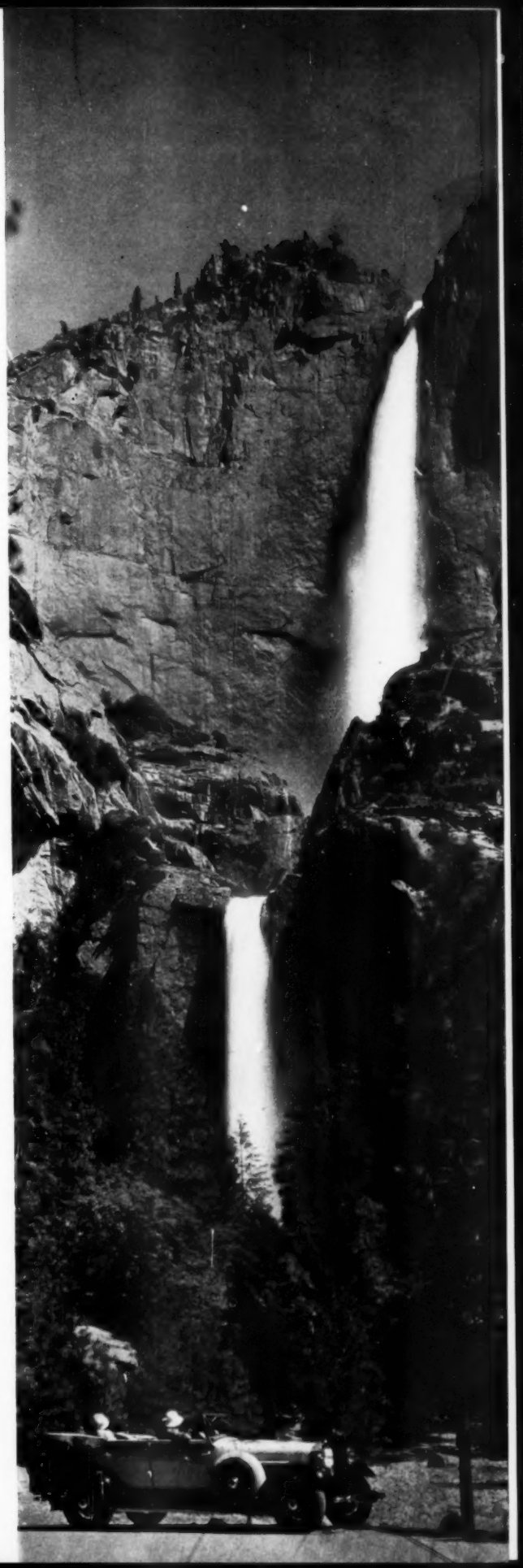
SAPLING SAM'S COLUMN 346

"WHO'S WHO" AMONG THE AUTHORS IN THIS ISSUE 352

PUBLISHED MONTHLY BY
THE AMERICAN FORESTRY ASSOCIATION
1713 K STREET • WASHINGTON, D. C.
35c A COPY • ◆ • FOUR DOLLARS A YEAR

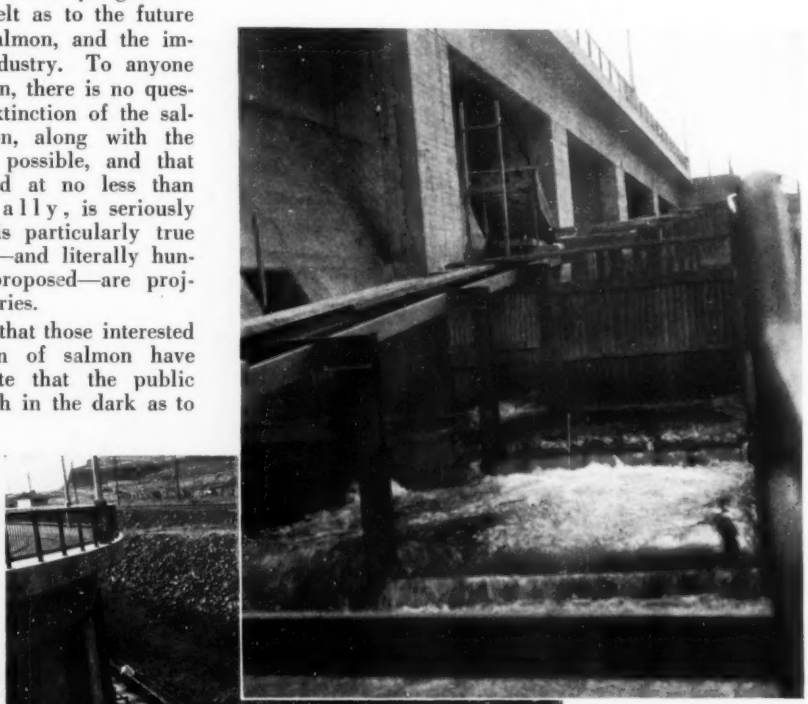
The Editors are glad to receive manuscripts and photographs submitted for publication, but they do so only with the understanding that they shall not be responsible for loss or injury thereto while in their possession or in transit. All manuscripts and art material should be accompanied by return postage. The Editors are not responsible for views expressed in signed articles . . . . Notice of change of address should be received by the fifteenth of any month to affect the mailing of the following month's issue of AMERICAN FORESTS.

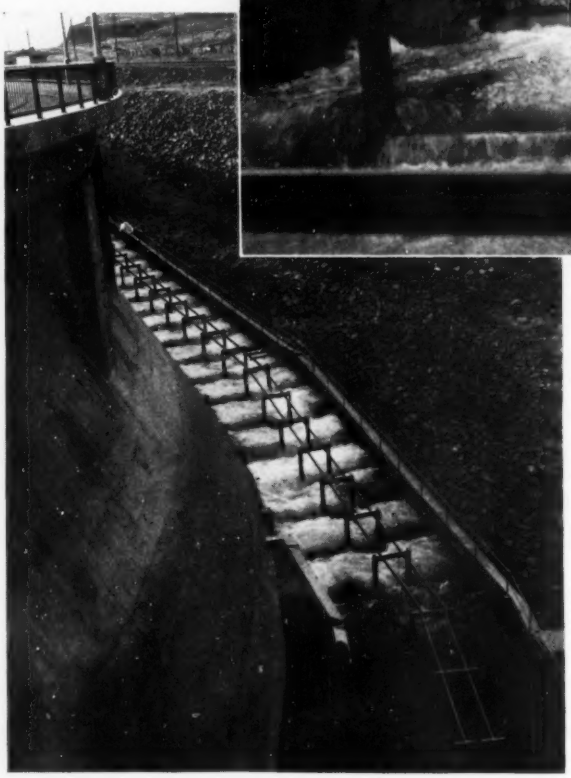
Member A. B. C.
Copyright, 1935, by The American Forestry Association



remainder of the Columbia River basin. The Grand Coulee Dam, under present plans, will rise to a height of 130 feet, but it seems probable that before the structure is completed, its height will be increased to anywhere from 250 to 350 feet, excluding salmon altogether from the upper half of the Columbia. With these great barriers spanning the river, it is only right that grave concern be felt as to the future of the Columbia salmon, and the important fisheries industry. To anyone close to the situation, there is no question but that the extinction of the salmon in this region, along with the steelhead trout, is possible, and that the fisheries, valued at no less than $15,000,000 annually, is seriously threatened. This is particularly true if additional dams—and literally hundreds have been proposed—are projected for its tributaries.

It is unfortunate that those interested in the conservation of salmon have been so inarticulate that the public remains pretty much in the dark as to the present and somewhat dangerous situation. It is likewise unfortunate that the value of the salmon as a natural resource has not been closely perceived. Had these facts been known, it is likely that provisions for the passage of fish by the dams would have been planned on a large enough scale to make sure that the structures would present no great obstacle to their migration. The value of the fish and the fisheries is important enough to the region to devote a considerable part of the flow of the river to fishways instead of power production. But this is not the case. Construction of the dams has not provided for those features which are considered by practical and scientific experts to be the minimal necessities for the preservation of the salmon. True conservation does not permit the destruction of one natural resource that another may be developed. This is clearly what might happen on the Columbia River which has been, and still is, the most prolific producer of salmon of any river in the world.





The Rock Island Dam has two fish ladders which salmon do ascend, but whether or not in sufficient numbers to perpetuate the Columbia River species is not as yet known. At the left is shown one of the ladders. If the fish enter them they make their way up in the same manner they would conquer rapids, by leaping from pool to pool. Above, the counting platform at the head of the fishway.

It is the highly developed homing instinct of the salmon which makes the situation so dangerous. It has been conclusively proved that salmon, when mature, return to the streams in which they were hatched. Not only is this true, but they return for the most part to the particular tributary streams in which they were hatched. This tendency has resulted in the formation of different races of salmon which propagate in various streams, and which have notable differences. An important consequence of this instinct is that when the passage to the home stream is blocked, that particular race of salmon will be exterminated. If the run of such a race is obstructed for a single year, there will be a reduced run every third or fourth year for a long period thereafter.

The great area covered by the Columbia River basin, and the large number of tributaries of the river, have resulted in the development of many races of salmon, which is indicated in one way by the different times at which they enter the river. There is not a single run of salmon in the Columbia lasting for a few weeks as in many smaller streams, but a series of runs which extends over ten months of the year, with some salmon to be found in the river at all times. In general, the runs of the spring months consist of salmon which will spawn in the headwaters of the river and its main tributaries. Having so far to go, these races consist of fish which are larger and stronger than the average. Later runs spawn nearer the ocean, and consist of fish which are not so desirable commercially.

Four species of salmon, the Chinook, the blueback or

sockeye, the silver, and the chum, ascend the Columbia to reproduce. These, along with the steelhead trout, represent about ninety-seven per cent of the value of the commercial fisheries of the river. A third of all the salmon packed in Washington, Oregon and California are taken in the Columbia.

All the species of Pacific salmon spend a large part of their lives in the sea, but enter fresh water for reproduction. Their eggs are laid in the streams or along the shores of lakes, where they are covered with gravel by the parent fish. When the young fish hatch they are practically helpless, being encumbered by a large protruding yolk-sac. They therefore remain in the gravel until the yolk-sac has been absorbed, when they emerge and begin to feed. They remain in fresh water for periods of time which vary with the species, but ultimately migrate down stream to the sea.

Their growth in fresh water is relatively slow, so the young on their seaward migration are small fish, from an inch to eight inches in length. After reaching the sea, the salmon range along the continental shelf, often traveling great distances from the river in which they were hatched. The abundance of food in the sea, and perhaps other favorable factors, cause a rapid growth to take place. After from one to four years, the fish return to fresh water for spawning, some ascending the Columbia as far as headwaters in the the mountains of Idaho and British Columbia. After leaving the sea adult salmon rarely feed. As a consequence, they draw upon the reserves of fat stored between their muscles throughout the spawning journey. This reserve material is also drawn upon for the development of the large masses of eggs. As a result, by the time the spawning activities are completed the fish are greatly exhausted. No salmon lives to return to the sea after spawning.

The steelhead is closely related to the rainbow trout. It is a splendid game fish, reaching a weight of fifteen pounds or more. Its habits are much like those of the salmon, except that it feeds when it returns to freshwater, and does not always die after spawning. In fact, its habit seems to be to return to the sea after spawning, and repeat the migration several times. This species enters all the principal tributaries of the Columbia, and has been found as far up them as it is possible for a fish to go.

It is almost impossible to determine how many salmon pass up the Columbia, or their habits while doing so. They keep to the deep water, swimming steadily against the current which directs their movements, and rarely coming into sight. It is only when salmon encounter rapids or falls that it is possible to count them or to appreciate the unconquerable but blind urge which drives them on. From the best sources at hand, however, it has been estimated that at least 100,000 salmon pass the location of the Bonneville Dam daily (*Continuing on page* 350)

Photo by A. J. Baker

In the great gorge which the Columbia River has carved through the Cascade Mountains, Bonneville Dam is rising—a barrier to the passage of salmon to their spawning grounds. This fish of highly developed homing instinct returns from the ocean to spawn in the particular tributary stream in which it was hatched, and if its way up the Columbia is blocked, there is no question but that the salmon of the Pacific Northwest face extinction.

THE HOUR BEFORE DAWN

By W. H. BOLLES

IT WAS late in the day when I reached the Black Butte lookout. The trail crew of two men had arrived ahead of me and were idly sitting by while the lookout prepared supper. Wearily I pulled the packs and hobbled the animals before joining the circle—more faces than the lookout had seen in many weeks.

With fall near at hand a disastrous fire season was passing into history. The first storm had already visited the high country and the parched mountains were drenched with rain. On the higher peaks a light soft mantle of snow appeared. But it was a quiet storm, with scattered lightning and thunder, just to let us know that Thor still rode the heavens.

The telephone rang, and while the lookout assumed his prerogative we tended the supper and speculated as to who might be calling. Nor were we long in suspense, for it was quickly evident from the conversation that fire was the subject—only the location remained a mystery.

"Where?" was our query as the lookout hung up.

"Between Golden and Big Creeks, in right rough country," the lookout informed us. "Middle Fork Peak reported it."

The trail foreman expressed everybody's opinion when he said bluntly, "That's a hell of a place for a fire to be."

At Black Butte, the country breaks from a high rugged plateau, timbered with lodgepole pine, into long steep slopes which terminate in abrupt bluffs that form the impassable canyon of the Middle Fork of the Salmon River. It is the roughest country in Idaho. There were no established trails and none of us had ever been beyond the immediate vicinity of the lookout.

After fortifying ourselves with a hasty but substantial supper we threw the packs and pulled out with something like an hour of remaining daylight to our credit. There was need for this, since it is dangerous, if not impossible, to travel in broken country after nightfall.

The faint trail quickly became indistinct and was finally lost in the deeping shadows of twilight. Darkness brought unfamiliar places and nothing to guide us but long experience in mountain travel. We were traversing a sloping ridge, well timbered. Yet despite this we made fair time. About ten o'clock the pungent odor of burning pine reached us. Not long afterwards a light spot of more than ordinary proportions appeared in the forest wall. It proved to be our first obstacle, an impassable bluff.

This vantage point, however, revealed the dim outlines of a gigantic canyon, a vast abyss, gloomy and foreboding in the darkness. Far below and to the right, perhaps three miles away, was the object of our attention—fire. Rather than one, there seemed to be many small fires, for all the world like the scattered campfires of an army at night.

Even in the darkness the situation was obvious. A lightning bolt had struck a tree growing on the open ridge near the river and fired the needles underneath, which had been kept dry by the sheltering branches. The rain, lighter there, failed to extinguish the fire, but had temporarily kept it from spreading. When the grass and underbrush finally became dry enough for the fire to run, enough smoke curled beyond the tree-tops to attract the lookout on Middle Fork Peak. The cool night air had checked the run before any appreciable damage had been done.

Just now the fire was confined to more substantial fuel, wood debris scattered over the mountain. But there would be another and larger run tomorrow. Likely the fire would reach into the timber, where the damage would be serious and the cost great. To fight it then men and supplies would

We threw the packs and pulled out, with an hour of remaining daylight to our credit.

have to be transported 150 miles. To control it tonight would be simple—if only we could reach it.

It was too hazardous to proceed further until daylight so we dismounted to discuss the situation. Presently a faint glow appeared in the east and the rim of a rising moon peeped over the jagged horizon. It grew perceptibly lighter almost immediately.

Not a word was spoken until the moon cleared the highest peak, but the same question was uppermost in the minds of the three of us. Would it be light enough for us to go ahead? We agreed it was and, leading the horses, we succeeded in skirting the bluff, but not until one of the pack animals lost its footing and rolled down the mountainside. After several somersaults the frightened horse came to a halt by the simple process of colliding with a large rock. He scrambled to his feet apparently unhurt. What could be found of the scattered pack was gathered and restored to its bearer.

To get beyond the bluff it had been necessary to work down the side of the ridge. Here the ground fell away sharply, so steep in fact that we dared not turn back lest in turning around the horses would lose their footing and go hurtling into the canyon below. Hopeful of more gentle slopes ahead, we went on until sheer cliffs blocked the way. Our situation became immediately grave, chiefly because of the horses. And every animal realized the peril. Cautiously we reversed and safely reached a small basin where audible sighs proclaimed the tension broken.

This experience made it quite evident that we must go around the deep canyon which, we later learned, was that of Golden Creek. Keeping along the south hillside where the timber was open, we cut back for about two miles to find that the drainage gradually widened into a large basin. It seemed best to cross this basin, climb the opposite slope to the ridge, and then follow it out to the fire.

The bottom of the basin was so densely timbered with spruce that the moonbeams failed to light the way and heavy darkness prevailed. This, together with a considerable number of windfalls, made progress exceedingly slow. Towards the center of the basin we found a sluggish stream bordered by soft ground. Probably the bog was small, though it seemed otherwise as we struggled along in the inky darkness. The horses plunged and floundered hock-deep in the morass; then one got down and the pack had to be removed before he could arise. When it became impossible to avoid windfalls an ax and flashlight were procured from the packs and we cut our way through.

Firmer ground brought some relief, yet the heavily timbered north slope proved no boulevard. It was unsafe to ride and in places the lodgepole pine saplings were so thick that it was nearly impossible to get a loaded pack horse between them. Time and again the packs were literally pulled off as the animals squeezed through openings far too small for them. After hours, it seemed, a light appeared ahead and we knew we had reached the summit. Everyone was hungry, so we opened the packs to lunch and rest for half an hour.

It was the roughest country in Idaho—steep slopes terminating in abrupt cliffs forming the impassable canyon of the Middle Fork of the Salmon River, and this run had created enough smoke to attract the lookout on Middle Fork Peak.

A well worn deer trail on the ridge-top signified a travel route, and we clung to it through the combined instinct of man and mountain horse. At times it vanished entirely, only to reappear, seemingly, just when we needed it most. In general it kept to the ridge save for short stretches where it detoured to avoid natural obstacles. Occasional but ancient ax blazes indicated former use, probably by prospectors. But there was no hint of horse travel in recent years.

The ridge, broad and gentle at the start, soon became a narrow, well defined hogback. The rocky points became more numerous and very rugged, while each successive break to lower elevations was longer and steeper. The lodgepole pine had long since given way to a patchy stand of Douglas fir.

The ridge suddenly came to an end. We dismounted and

listened for a while to the distant roar of a mountain river. Then, searching along the rim, we found a faint game trail and plunged over without knowing what lay ahead. The half-sliding descent over a sinuous rocky trail was negotiated without accident and brought us, after a few hundred feet, to more gentle slopes. Ultimately we reached a small saddle and halted to readjust the badly disarranged packs. Here the scattered yellow pine timber was mute evidence that we had descended many hundreds of feet since early evening.

Our position was growing critical and I found myself wondering what our fate would be should we fail to reach the fire and corral it during the early hours of the morning. In all probability it would gain steady headway throughout the morning, to be fanned into an inferno by the afternoon breeze. And when that happened I wanted to be somewhere else!

The horses plunged and floundered in the morass. One horse got down, and the pack had to be removed before it could rise.

It was well towards morning and growing dark again, for the brilliance of the moon had begun to wane. The game trail became less distinct as we progressed, to end by splitting into numerous branches, none of which appeared to be suitable for horse travel. It now seemed impossible to go on so we set about seeking a camp site. But suddenly the atmosphere became heavy with smoke and we decided to make one more attempt to break through. It was a painful effort but, with victory within our grasp, we were willing to make it.

We fought our way to where the ridge terminated in a series of broken bluffs. The game trail disappeared altogether, and darkness obscured the terrain. But below and in front of us, half a mile away, were the fires, now burning low.

I gazed with long and studied interest, then: "Hey, fellows, look here."

They came. "See those specks that flicker back and forth in front of the fire.

"Yes."

"Well, those specks are men! Apparently somebody from the Salmon camp across the Middle Fork to help us! That's why she burned low so quick. They'll hold her!"

Everybody sighed. Then one of the boys rent the night air, with a Salmon River yell. We waited, with the silence broken only by the distant river; then from far below came a faint but unmistakable answering shout.

Someone observed that it was five o'clock and would be daylight in an hour. It had been a night's work long to be remembered, and after lifting the packs we lay down in our clothes to sleep away the hour before dawn.

National Competition for Wildlife Photographs

CASH PRIZES amounting to $250, and Certificate Awards of Excellence, are offered photographers during 1935 by The American Forestry Association for the most outstanding photographs of wildlife—animals, birds and fish—made in the United States.

This is the third National Photographic Competition sponsored by the Association, the 1933 and 1934 contests being for photographs of beautiful trees. The 1935 contest opens July 1 and closes midnight November 30.

The Competition is national in character—that is, awards will be made on the basis of photography regardless of locality. Any photographer, amateur or professional, is eligible to compete.

In addition to cash and Certificate Awards for outstanding pictures entered in the contest, the best work of competing photographers will be nationally exhibited. Galleries in every section of the country will feature the collection in special exhibitions.

For detailed information and rules governing the Competition, and for the necessary entry blanks, write The American Forestry Association, 1713 K Street, N. W., Washington, D. C.

Looking down into the Big Bend Country from the South Rim of the Chisos Mountains.

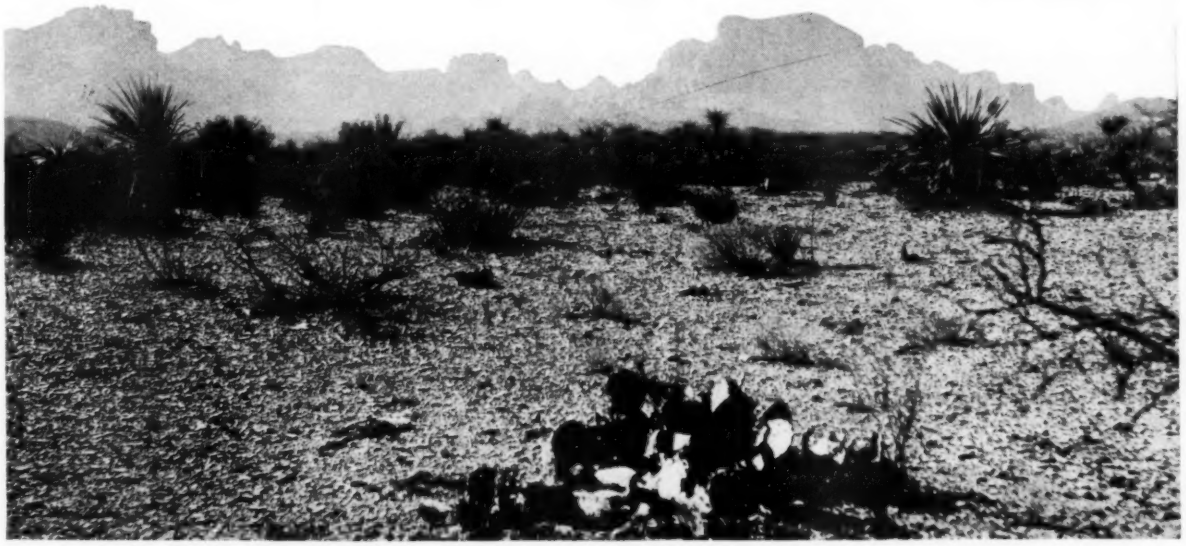
THE BIG BEND OF THE RIO

An International Park Between the United States and Mexico is Proposed Where the River Runs North to Create the Colorful and Romantic Big Bend Country of Texas

By ERLE KAUFFMAN

Photographs by Roger W. Toll

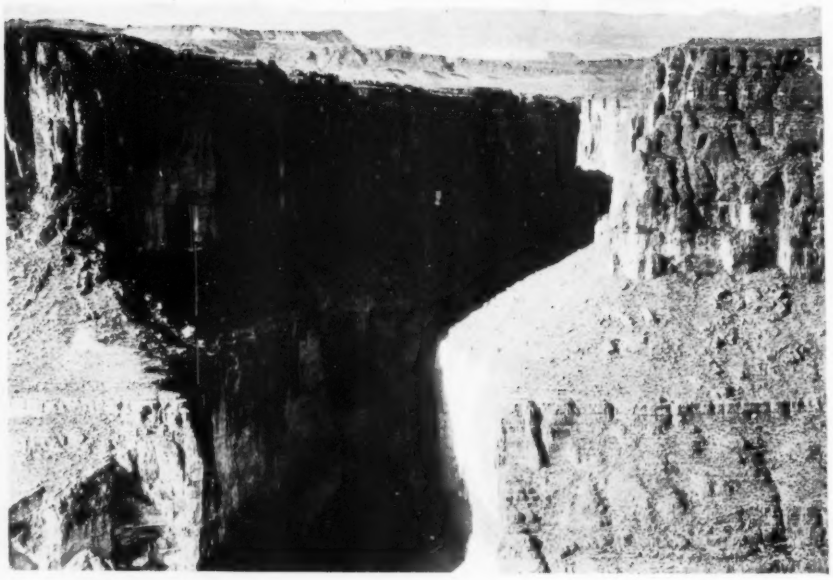
TO the American mind, ever responsive to the dramatic, there is no river more intriguing, more romantic, more steeped in history than the Rio Grande del Norte—the Great River of the North—which for more than nine hundred miles forms the international boundary between the United States and Mexico. As rivers go, it is not distinctive, with the possible exception that it presents features of a complex physiographic type, first being a river of the Rocky Mountains, then of the barren wastes of the interior desert, and then of the gulf coastal plain. It is of no



Detached and isolated, the Chisos Mountains are fantastical as they rise from the surrounding desert.

The spectacular gorges of the Big Bend. At right, Santa Helena Canyon, 1,500 feet deep. Below, a closer view, with Mexico on the left. The Canyon is not traversible except by boat, and at great risk.

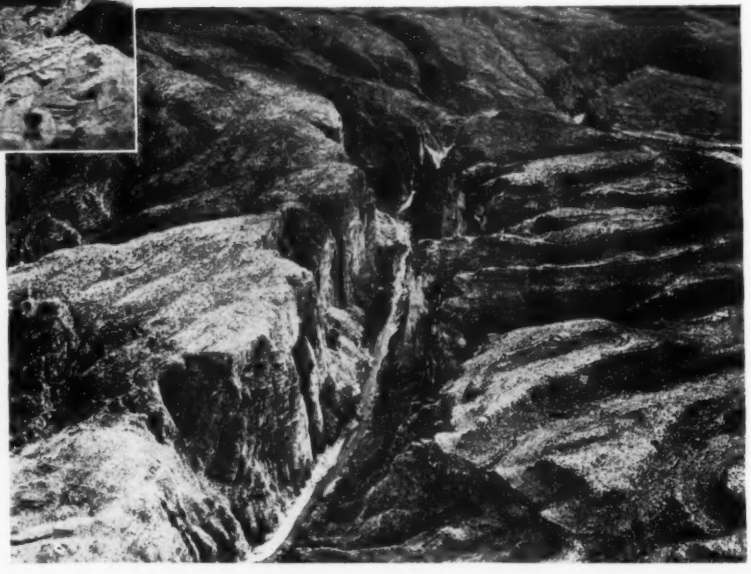
Lower right, the picturesque Mariscal Canyon, 1,400 feet deep from mesa to waterline.



tions that meet in its channel, and has veiled the depredations of those picturesque border characters who found the hazardous and sometimes lucrative business of cattle thieving, smuggling and banditry to their liking.

Much of this drama has passed into the romantic history of Texas, but the waters of the Rio are still carving narrow, spectacular canyons through the mountains that challenge its course, still pushing its silt-laden way through the desert and coastal plain. And the country remains, except where civilization has moved in, much the same as when only the hard-riding Texas rangers vied with the desperadoes for its mastery.

And, singularly enough, the most dramatic and by far the most interesting region retaining practically all of its untamed character, is protected by the Rio itself. Steadfastly holding a southeasterly course from the springs that gave it birth, it suddenly reverses, somewhat east of El Paso, and flows almost due north for a distance of eighty miles, half encircling an area of approximately one and one-half million acres—an area of deserts that are desolate and forbidding, of mountains that are forested and beautiful, yet so isolated and mysterious that the



importance for navigation because of sand bars which obstruct its channel in the coastal plain; nor has industry been attracted to its offtimes sluggish current.

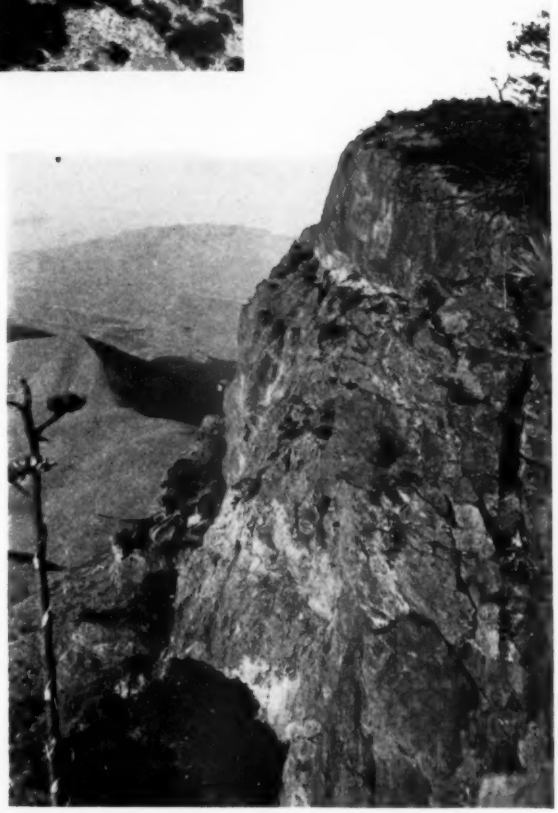
Yet by the very circumstance of its course from the San Juan Mountains, in southern Colorado, to the Gulf of Mexico, the Rio Grande has cast its spell over the fact-finding historian and the imaginative story-teller alike. For in its journey to the sea, this river of three names—Rio Grande, Rio del Norte and Rio Bravo—has watered the crops of the American aborgines, has washed the blood of heroic sons of the two na-

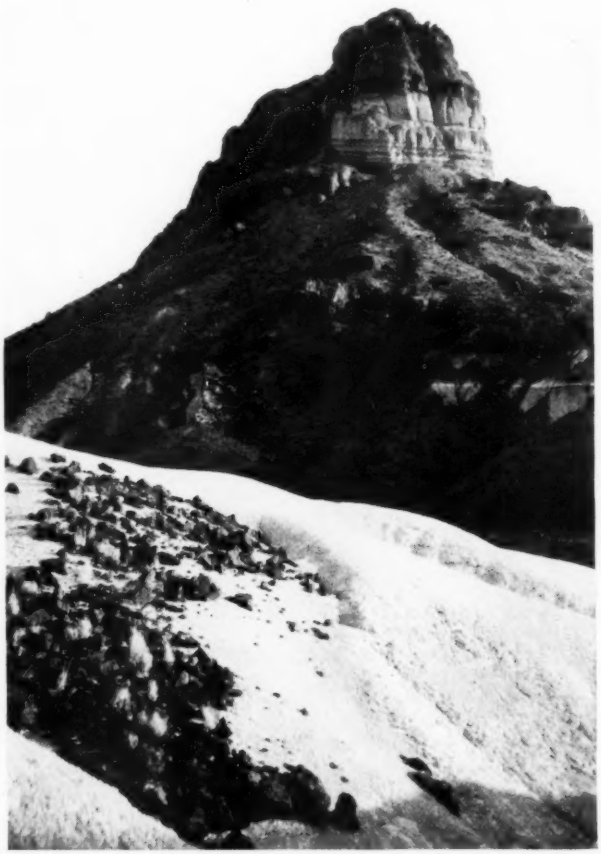
Glimpses of the Big Bend Country, site of the proposed International Park between the United States and Mexico, showing its dramatic ruggedness. At left, looking at Casa Grande from Emory Peak. Below, the South Rim of the Chisos Mountains. Lower left, beautiful Castelone Peak.

Indians named them the Chisos or "Ghost" Mountains. This area is known as the Big Bend country of Texas, and so unspoiled is it, so varied and spectacular in scenery, so outstandingly different from any other section of the country, that it has been proposed and favorably considered as a National Park.

More than that, Mexico has been asked to establish a similar park area on the south side of the Rio Grande, the two adjacent parks to form an international park corresponding to Glacier National Park, in Montana, and the adjoining Waterton Lakes National Park, in Canada.

Fantastical is the word often used in describing the Big Bend country—and it is aptly applied. The Chisos Mountains are fantastical as they rise in great isolated peaks from the surrounding desert, but not more so than the desert itself. From its lowest point on the Rio Grande, 1,750 feet above the sea, to its highest on the summit of Emory Peak, in the Chisos, 7,835 feet in elevation, the Big Bend country is as much of a spectacle in color and desolation as is Mt. Rainier in glacier and forest splendor. Viewed from any one of the several desert roads that reach into it, it becomes a rough and broken last frontier, an isolated kingdom where only the strong survive. But from the summit of Emory Peak, there is unfolded below what appears to be an earthly sample of the fabulous Lost World, so silent and motionless and colorful it is.





The Chisos Mountains are not part of a greater and more extensive range but stand by themselves, detached and isolated, covering an area in excess of fifty square miles. Emory Peak, the highest point of the range, is also the third highest mountain in Texas. The name, Chisos, was given the range by the Indians because of strange lights and sounds seen and heard there. It means "ghost."

Roger W. Toll, Superintendent of Yellowstone National Park, who investigated the Big Bend country for the National Park Service, found the Chisos Mountains enchanting. "As you approach the Chisos," he reported, "they seem to be treeless and desolate. But when you enter one of the canyons you find abundant vegetation, and in the upper elevations are forests of pine interspersed with oak and a variety of other trees.

"At the south rim of the mountains you stand at the edge of an abrupt cliff and look out over a wide panorama, past dry foothills, toward the Rio Grande, fourteen miles away and five thousand feet below. Beyond, for a great many miles, the ragged mountain ranges in the States of Chihuahua and Coahuila, in Old Mexico, can be seen."

But not all of the drama of the Big Bend country is found in its deserts and mountains. On the Rio Grande below the south rim of the Chisos are three spectacular gorges—Santa Helena, Mariscal and Boquillas. All three canyons, from 1,000 to 1,500 feet deep, are a part of the international boundary.

The Santa Helena is the most westerly or upper of the three canyons. "From the rim of the mesa the cliff plunges abruptly, perhaps 500 feet, before being broken by slide rock, and then drops another thousand feet to the bottom of the narrow, inner gorge," Mr. Toll reported. In places the canyon is less than 200 feet wide at water line.

The Rio Grande has carved Santa Helena Canyon, which is six miles in length, through strata that are now higher than the land to the north of the canyon, indicating, declared Mr. Toll, that the cutting process has been going on for ages, while geologic changes have altered the topography but not the course of the river. The Mesa de Anguilla, the uplift through which the canyon has been cut, ends abruptly at the mouth of the canyon. The eastern edge of the uplift is a cliff, facing east. The river has cut through the uplift and across the fault line.

"By climbing to a bench above the river at the mouth of the Santa Helena," according to Mr. Toll's report, "one may go on foot up the canyon for a quarter of a mile. Here the bench dips below the water level and the cliffs rise directly from the water, making it impossible to traverse the canyon on foot. To cross it is impossible."

The Mariscal Canyon is at the extreme southern tip of the Big Bend. It is approximately six miles long and is 1,400 feet deep. The Boquillas Canyon, or "Little Mouths," lies farther to the east. It is four miles in length and its greatest depth is 1,000 feet.

In keeping with its distinctive character, the Big Bend country is a veritable Eden for interesting plant life. Among the rare species are the Mexican or "weeping" cedar found in the Chisos Mountains, and the resurrection plant, or "dry ball" withered and dead in appearance, waiting for rain to unfold its green fronds, seen along the Santa Helena Canyon. The more common species include yellow and pinon pine, Douglas fir, juniper, manzanita, and a dozen or more varieties of oak.

In the Chisos Mountains may be found bear, panther, fox and several species of deer, one of which is very small and is known as the fan deer, according to Mr. Toll.

Such, briefly, is the Big Bend country as it may be found today. Half encircled by the great bend in the course of the Rio Grande, it has few roads and no railroads. No main route of travel enters it. Its visitors are few, and its residents are fewer still. Everywhere the Spanish influence is strong. Only two sections of the United States are as far south—a part of Texas and a portion of Florida. Its latitude drops as low as twenty-nine degrees.

Mr. Toll reported sparse grazing on some of the area, which supports a few cattle, sheep and goats. But these ranches are few, nestled for the most part in sheltered canyons along the edge of the desert or in the lower foothills. There are some deposits of mercury ore in the vicinity. But in general the region is not rich in natural resources of commercial value. As a scenic and recreational area, however, as a land to intrigue and inspire, the Big Bend country of Texas is distinctive.

Despite the fact that few areas in America have contributed more unwritten anecdote and legend, historians are still endeavoring to solve many of the riddles of the Big Bend country. From an archeological viewpoint, the region is believed to be of the "basket-weave" culture, but there is little evidence to support this—not yet. Its Indian history is vague, although mortar holes in rocks where food was ground, metates, and other evidences of Indian occupation of the region are fairly numerous. The era of the desperado, the smuggler, the raider is essentially an era of anecdote.

But it is known that the famous short-cut "smugglers' trail," which is now almost legendary in border history, passed through the desert and lower mountains of the Big Bend region. Over this trail were driven cattle from the great haciendas in Mexico, smuggled in to feed the troops at old Fort Davis, near Alpine, the principal point of access to the Big Bend country, during the years around 1860 when food supplies were scarce.

It is recorded, too, that in 1855, Jefferson Davis, then Secretary of War, had camels introduced into the desert region around Alpine as a means of transportation, but as they did not prove satisfactory to frontiersmen accustomed to horses and mules, they were turned loose and finally died in the Big Bend country.

About the same time the Government contracted for a monthly mail service between San Antonio and San Diego, via El Paso, the stage route crossing the upper regions of the Big Bend. Indian depredations, particularly in the Big Bend country, were so severe, that the trail was often described as one long battlefield. When the Civil War gripped the nation, the forts in the region were deserted and the entire Big Bend country was left to the Indians.

During the hectic years that followed in the wake of the war, when cattle thieving, smuggling and banditry held sway along the border, the Indians, too, deserted the Big Bend. When at last the Texas rangers conquered the desperadoes, to a degree at least, a few bold frontiersmen drove cattle into the foothills and established ranches, scattered remnants of which may still be found. A few silver mines appeared; several remain today.

But the Big Bend country remains unchanged. It is today what it was when Juan de Mendoza first saw it in 1684 on his notable exploration across the Rio Grande del Norte—a country where mountains and desert meet in a glory of color and desolation.

American Forestry Association to Hold Annual Meeting in the Adirondacks

THE 1935 annual meeting of The American Forestry Association will be held in the Adirondack Mountains of New York in September. The meeting will mark the sixtieth anniversary of the founding of the Association and will be held at Lake Placid in coordination with the three day program of the New York State Conservation Department, September 12, 13 and 14, to celebrate fifty years of conservation in that State. The two meetings being held at the same time and place will form one of the greatest conservation rallies in many years. Plan now to attend.

Photograph by
H. Armstrong Roberts

I'VE HEARD THEM TALKING

By ARCHIBALD RUTLEDGE

DURING all the years that I have roamed the wildest and most remote haunts of the children of nature, my real motive has not been a scientific one. It does not matter to me what the color or shape or weight or Latin name of living creatures may be. I have been concerned chiefly with the question of their behavior: how they live, how they face disaster, how they meet emergencies. And my study has had the underlying purpose of bringing home to my fellow human beings some suggestions, learned from nature, as to how we ourselves can make of life a saner, better, and happier thing.

In all forms of life, the matter of communication is one of vital importance. "Are you there?" the English ask on the telephone. And that is a question that all living things are asking. They must keep in touch with their fellows. Humans communicate by wire, by the radio, by writing, and by the voice; and of course lovers with their eyes dispatch "fair speechless messages." Wild things employ the sense of smell to find their friends, and to escape enemies; and in the case of predators, to discover their prey. But they communicate chiefly by sounds; and as these devices are most nearly allied to man's, I shall confine myself to telling how the children of nature talk, and what they say. Perhaps I can best do this by recounting some stories out of my own experience in the wilds.

Much of my salt water fishing used to be done with a cast-net at night, when I used to have a negro boatman to help me. Though he was a devoted henchman, he manifested a developing lack of enthusiasm for the work, which backwardness I at last discovered was due to his uneasiness over the eerie sounds from the marshlands. One night his emotions entirely overcame him when he heard an old oyster-seeking raccoon grunting, a horned owl hooting from the red cedars of a hummock, and sandpipers, yellow-legs, and willets whistling ethereally from the immense darkness that shrouded us. What impressed him most was not the mere noise but the fact that sentient communication was in progress.

"They is telephonin'," Caesar muttered uneasily, feeling that he had no business on that particular party line.

His description has a certain felicity of accuracy. As soon as one is aware, he realizes that, in the natural world, he is in a marvelous and complex world of the radio and the telephone. If he enjoys nature by driving down the high-

Photograph by Canadian Department of Interior

way as if to catch something, he misses all this sub rosa music, conversation, long-distance converse. Indeed, unless he makes himself a part of it, all of nature's great processional goes on without him.

One of the most appealing bits of radioing I ever overheard happened one day when I was hunting Indian arrowheads in a field in which the owner was plowing down the wheat-stubble. At the end of the field, on the borders of a little trout-stream, I flushed two old quail and a covey of tiny quail chicks, thirteen of them. I am quite sure that their flight across the stream—not more than two yards wide—was the first aerial voyage that they had made. And some of them did not quite make it. Two landed among the pebbles in the shallow water on the farther side, and four came to earth against the bank, where they lay exhausted, their little wings outstretched.

A little later, as I was walking up the field, close to the unplowed stubble—where this family had evidently had its summer home until the cataclysm of plowing had come—a little fairy suddenly emerged from behind a small clod and valiantly tried to run over the rough wilderness of the upturned earth. It was a lone little quail, so small that pebbles obstructed his progress, and spears of old wheat stubble tripped him. As he ran up those immense hills and down into those unknown abysmal valleys, he extended his frail wings for balance and for support. A pathetic infant he was. For a few moments I watched his valiant getaway. All the while he was peeping faintly but with all the voice he had for mother and dad and the rest of the family. All the while also the old mother kept calling softly, anxiously. She must have known that there was a straggler, and she was radioing her messages of love to him, telling him where she was.

One December day, in the heart of the great Santee Swamp, I stood in the mellow sunshine of those kindly latitudes, admiring a great holly tree that towered in conical grace more than a hundred feet above the forest-floor. The silvery bark of the trunk and limbs, the glittering green leaves, the thousands of scarlet berries winking and glowing in the glimmering foliage—these brought to me a sense of wonder in thinking that, though this great tree had been here at least a century, perhaps I was the first human being who had ever beheld its soaring beauty.

As I stood there, from another part of the swamp came a flock of robins—and such a flock! They kept pouring into that tall holly-tree in numbers almost incredible. There were many hundreds, all intent upon feeding on the rosy berries. There seemed to be a red breast for every red berry. That whole magnificent tree trembled with the activity of these joyous visitors, became lyric with their myriad songs.

Now, this was a kind of reception,—a communal gathering; and I know that in human life such occasions are not events of complete relaxation to joy. People talk about their losses and their operations. They communicate their fears and their miseries. Here were migrants in a lonely swamp, making the spirit of Christmas seem a real thing.

Now, what was in the voices to which I so delightedly listened? I heard no complaints, no threats, no laments; only a happy calling of crowds of revelers to their fellows; only song, spontaneous and sweet; only voices in harmony with the sunlight, the fragrance of the dewy wildwood, the beauty of the noble tree to which these wanderers had gathered.

© Hobart V. Roberts

Now, it has been my experience that birds rarely communicate any emotion save joy; of course, they occasionally give cries of alarm, or, like the Baltimore oriole, call rather distractedly for a mate; but whether alone in little groups, or in great concourses, their utterances are generally about the happiness of life. They utter felicity. They have a great gift of silence; and when they are called upon to suffer, they do so without complaining. Indeed, the dismal habit of whining is almost uniquely human. And this business of permitting sadness—which is probably imaginary—to overshadow the lives of others has no counterpart in nature. There is no such thing in the natural world as refined and self-indulgent self-pity. Valetudinarianism is a mortal failing.

It has been a lifelong habit of mine to be out very late at night. I like to listen to the voices that haunt the purple darkness, calling mysteriously under the stars. After many

years of harkening to migrants, I know that I have caught in their fleeting joyous tones the notes of fellow service, brotherhood, concern for others. These flute-like cries of the migrants are calls of reassurance. I think they are calls of love, in the larger sense; messages of strength and hope and good cheer.

It is during migration that the telephone of the wild is most active. By it lines of communication are kept intact. It makes the hosts cohere. There are continual cries of guidance, reassurance, and of being reassured. The wild geese are going to Athabaska, perhaps; and all of them are talking about it. The mallards are headed for Hudson's Bay; they know the route, but they keep encouraging one another mile after mile. If there is a straggler, they pick him up by radio. The vast and solitary darkness is a-tingle with vivid and vital communications of these children of nature.

affords an excellent opportunity for the hearing of nature's radio, and while the field and the forest are admirable situations also for this purpose, probably the marsh gives the best chance of all for listening in. The reasons for this fact are not difficult to discover. The creatures of the marsh live a hidden life, shrouded forever in the eerie and whispering wilderness of the reeds, the wampee, the water-lilies, the lotus, and the mallows. Their enemies and their friends are alike sequestered; and it is exceedingly difficult yet vital for a marsh-dweller to know his physical proximity to his neighbors. Hence his communications are as frequent as they are guarded; and they are generally followed by a significantly secretive silence.

Much of man's progress has been marked by an improvement in communication. In nature the ancient forms of converse still abide, and are potent. Of course, the messages of love must ever hold our highest interest: the lonely

Photograph by C. A. Schelnert

Well, we are migrants through life's huge and rainy night. We wail a good deal. What if we all, feeling compassion for our universal plight, should begin to cry messages of brotherhood, far through the darkness, even as these wild birds do? Rarely does one of them not arrive safely at his goal, so lovingly companioned has he been. But we know how many of our fellows faint and fall out of the flight of life, often for the mere want of a friendly word. Moreover, in nature, this sort of communication becomes increasingly intense under adverse conditions; that is, the blacker the night, the more often do the voices call, and the sweeter they sound—lonely pilgrims of the deep, who always remember that they are not alone; who make others feel that they are not alone; not polluting the silence or the storm with outcries of personal despair, but singing out, even through the sleet and howling blast, "All's well! Here we are to help and to guide you! And it will be daybreak soon!" The downright comradeship and friendliness of all this is assuredly something of which our present life stands in dire need.

While a lone hilltop during the season of either migration

stag following the doe's delicate alluring scent; the cardinal pouring out a scarlet soft madrigal to his mate; the dragon-alligator thundering his stentorian solo; the mockingbird, for love's sake rebuilding Eden with a song. Theirs, like ours, is at such times a cosmic rapture, which finds expression in a universal language.

Naturally, I realize that this matter of communication is a vast subject, on which books might be written. I am merely trying to show, in a very simple way, that it is a custom of all life; and wherever found is adequate; and that its forms in nature have lessons for humanity.

While it must be admitted that there are harsh and raucous voices in the natural world, nevertheless by far the greater number are melodious, and not louder than they need to be. To me, there are two sounds in nature tenderer than all others; and neither one is the voice of a songbird: one is the treble piping of a little wild turkey that has lost its mother; and one is the elfin bleating of a baby fawn. He who has heard these voices will come to an appreciation of the spiritual kinship of all life; and his heart will be touched by the cosmic pathos of a child's (*Continuing on page* 347)

UNIQUE NATURE TRAILS

By MARY E. PASCO

F. S. Gehr

An interesting inhabitant of the Shade Swamp Sanctuary.

A FASCINATING method of presenting nature to outdoor enthusiasts has been developed in Connecticut. With many miles of trail through unbroken areas in the state forests opened up by C.W.A. and C.C.C. workers, nature guides have been assigned to the most popular areas so that the mysteries of forest and field may be solved for the layman. And for those who wish to discover nature's secrets for themselves, the parks have been posted with novel trail signs, each presenting a brief lesson in nature lore.

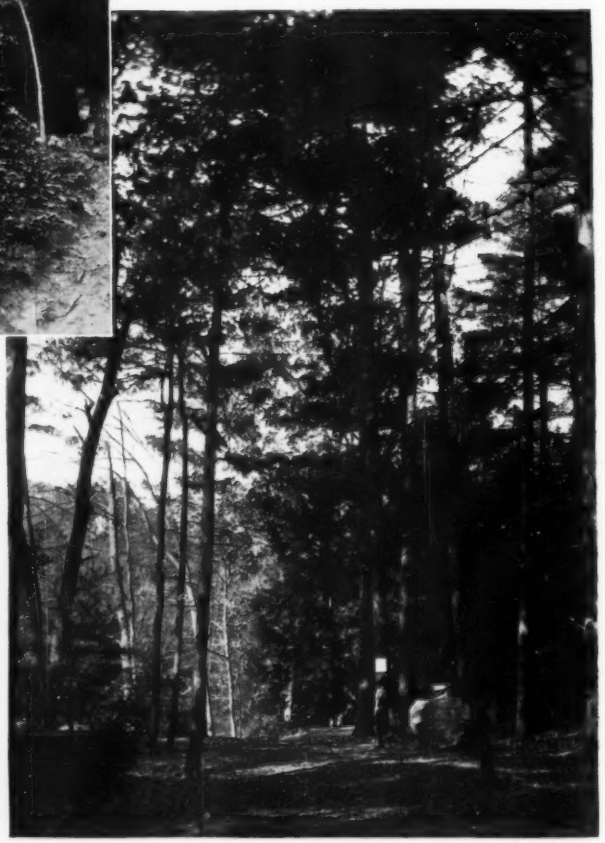
The most popular of these nature trails is at Barkhamsted, where two thousand acres of wooded hills and valleys in the People's Forest offer every enticement to be found in the New England forests. Purchased by the people of the State through the Connecticut Forest and Park Association, the People's Forest is indeed what it is called. Bathing beaches along the Farmington River, outdoor fireplaces, camping sites, and ten miles of hiking trails belong—every stick and stone—to the people of the State. The nature trail, a twenty minute walk through this reserved bit of Connecticut, is probably the most talked about part of the People's Forest. It is divided into several sections, named according to its immediate phase of interest, starting with the "cloud" trail, which runs across an open meadow just outside of Matthie's pine grove. At frequent intervals along the meadow path short green posts support appropriately labeled paintings of the different cloud formations common in the Northeast.

In the People's Forest are two thousand acres of wooded hills and valleys with all the lure of New England forests. There are bathing beaches, camping sites, outdoor fireplaces and ten miles of hiking trails—all belonging to the people of the State. This shows a delightful stretch along River Road, with Farmington River in the background.

***Right*—This is the tablet at the entrance to Matthies Grove, where the Nature Trail begins, in People's Forest.**

Adjacent to one part of the "cloud" trail is a nursery maintained by the State. Red and white pines, arbor vitae and hemlock, tulip, ash and locust are but a few of the many species indigenous to Connecticut which are represented in the nursery. All have been labeled.

As the trail leaves the meadow it follows a slight rise through the woods, and a brief walk



Arthur J. Tefft

brings the visitor to a level opening a few feet above Cloud Meadow. Here members of the Civilian Conservation Corps have constructed a museum building which will eventually harbor specimens of natural history brought in from the woods and fields. It is hoped that this building will prove a popular meeting place for bird, botanical, and naturalist clubs.

In back of the museum the nature trail continues through a shadowy stretch of mixed conifers and hardwoods, where the forest floor is typically covered with native woodland plants. At one spot on this trail, by some strange but convenient coincidence, five different varieties of oaks—white, red, scarlet, black and chestnut—grow near each other. Their common and differing characteristics are pointed out on their signs.

Small, attractive metal signs are posted intermittently along the trail, or occasionally off to one side in the woods, portraying moths, fungi, wild flowers, or some other natural objects which one may expect to see in the woods at any moment. As with all other signs posted in the People's Forest, each one portrays several items of interest, for instance, the egg, larva, pupa, and adult stages of the insects, and the seed, blossom identification characteristics, and the economic importance of trees.

FORESTRY TRAIL
FUEL WOOD
ORDER of FUEL VALUE
1. Hickories
2. Oaks
3. Beech
4. Birch, except gray
5. Maple
6. Ash
7. Elm
8. Tamarack
9. Chestnut
10. Hemlock
11. White Pine
ONE CORD OF SEASONED WOOD IS EQUIVALENT TO
ONE TON OF COAL
FORESTRY TRAIL
Red Pine Shoot Moth
Red Pine Shoot Moths Lay Their Eggs In The Terminal Buds On Any Branch Of Red Or Scotch Pine Trees. Grubs Attack The Buds Retarding Their Growth, Deforming Branches. Infested Buds Are Discovered By The Dying Needles And Pitch Flow.
-CONTROL-
Remove & Destroy All Infested Buds —
C.C.C. 1934

Two of the attractive metal signs with which the Nature Trail is posted. Each one carries valuable and interesting informatior..

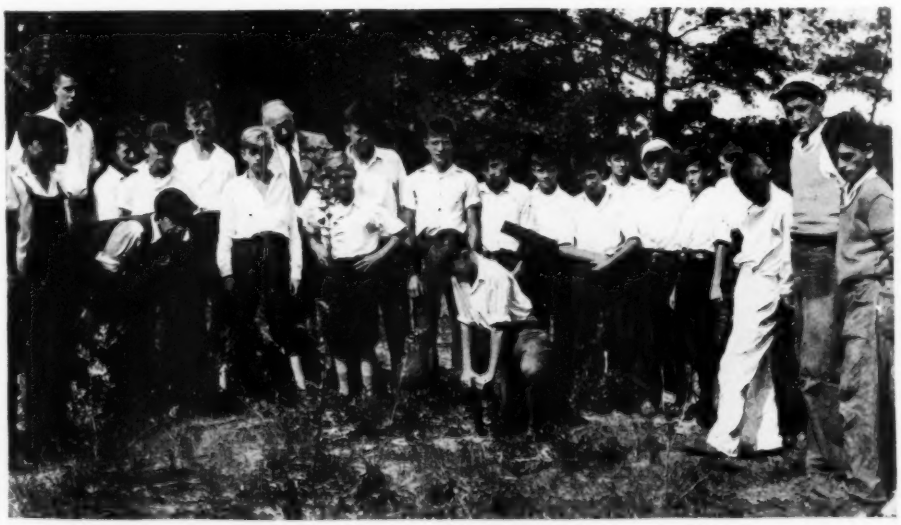
Not far beyond the five oaks the trail becomes the "laurel" trail, where wild mountain laurel spreads out in evergreen profusion, illustrating to the observing eye why tree seedlings rarely get a chance to develop in pure laurel stands. In the spring this trail is a pink and white glory.

On a fairly open stretch of the trail, under a lacy canopy of tall oaks and maples, a geological display of local rocks has been arranged. People are as fascinated with the hornblende and mica as the old pioneers were with their gold. The women folks have learned to their amazement that "Dutch Cleanser" is made from native rocks, and many such surprising bits of information are gleaned from this exhibit.

A clear cold spring forms a small brook at the bottom of the next hill, and along its banks grow almost every wild flower native to the State. A dirt road borders the trail at this point, which makes the spring and its flora available to invalids who cannot walk over the trails. For them, the nature guides are transplanting specimens of all plants along the trails to a spot near the spring, where already cardinal flowers, thoroughworts, turtle-heads, and even the rare Hooker's orchids are growing in scattered clumps.

A tiny pond beside the road has acquired the name of Cranberry Bog, just because a few native wild cranberries grow around it—a plant most people have never seen. Interest in the pond's aquatic life is second only to that in the geology exhibit. Water striders and whirligig beetles seem in perpetual motion, and vicious looking helgrammites elicit challenging yells and squeals from children.

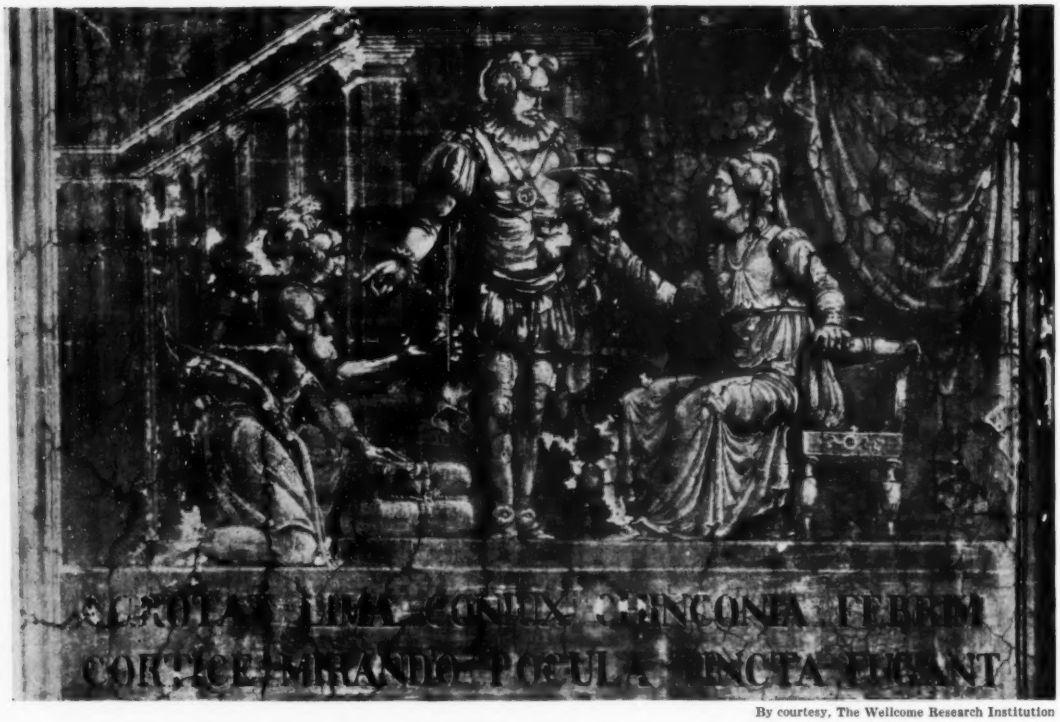
The final stretch of the nature trail swings around from Cranberry Bog to the museum building. This last stretch is devoted to birds, and many painted plaques are posted along the way, indicating what to look for. Bird houses, constructed by the C.C.C., have been put up, and diagrams posted to show how they are made. Winter feeding stations have also been established.



Trails through unbroken areas in many of Connecticut's State Forests have been opened up in the past two years. These boys, members of the Nature League, are labeling plants in the Shade Swamp Sanctuary.

Most people who visit the nature trail are not content until they have seen the "forestry" trail—unique in this country. It traverses a strip of woods about a mile and a half long, where various types of trees may be seen. Half acre plots are devoted to the demonstration of authentic forestry operations commonly in use in the East, and appropriate signs, larger than those used on the nature trail, are posted to describe the various forestry operations and indicate the value of the work to Connecticut forests. The damage done by the European shoot

(*Continuing on page* 347)



By courtesy, The Wellcome Research Institution

Reproduction of an ancient fresco from the hospital of the Santo Spirito in Rome, depicting the Countess of Chinchon receiving a cup containing chinchona bark, the source of quinine. The inscription translated reads: "The Countess of Chinchon lies sick at Lima; the cup with the wonderful chinchona tincture expels the fever."

DRUGS FROM THE FOREST

By

LOUIS E. WISE

THE scene is laid in Peru. It is the year 1638, and a fearsome quiet reigns in the Spanish governor's palace. The Countess of Chinchon, first lady of the land, lies stricken—now tossing in fever, now trembling with the ague. The surgeons stand by, helpless; the Castilian apothecaries are idle. All the usual remedies have failed. The count, ordinarily so cold and self-contained has quite lost his head. He has summoned the priests, for the Countess appears to be in the throes of death.

Enter the Corregidor of Luxa, who takes in the situation at a glance, and immediately launches into a monologue. Some eight years before, the old man tells the distraught governor, the hand of God lay heavily upon his humble servant. He, too, was afflicted with an illness caused by the miasmas of the jungle. In its symptoms and cycles, the disease was no different from that now torturing the gentle lady. But look at him now! Was he a moldering corpse? Was he a grinning skeleton? No! Well then, why all this depression in the castle? Eight years ago, when he was *in extremis*, a faithful Indian offered him a strange decoction from the bark of a great, beautiful tree. Nasty stuff, too, tasting like a broken gall-bladder. But a man swallows anything at the threshold of St. Peter.

A few hours after that bitter draft, continues the loquacious Corregidor, came a mighty ringing in his ears, as of cathedral bells. Maddening! Terrifying! But the potent medicament had done its work. In due time the chills abated; the fires were quenched. "Courage, Your Excellency! Rouse yourself! Do not delay!"

Not a minute to lose. The bark is found. The Count commands his skeptical apothecaries to prepare the bitter fluid-extract. Unwillingly they obey. Unwillingly, too, the Countess forces it down. *Ave Maria!* Within the night she takes a turn for the better. Eventually she recovers. Her pride and arrogance return. More than that, she is a patron of that boon of boons, "Peruvian Bark."

In honor of her memorable cure, the bark was christened "Cinchona." Its magical properties are bruited throughout Europe by those keen intellectual aristocrats of the 17th century, the Jesuits. Thus it also becomes known as "Jesuits' Bark," an important and very popular remedy.

This is one version of the discovery, by Europeans, of a famous prophylactic and specific against malaria. True, it was not until 1820 that the chemists, Pelletier and Caventou, actually discovered "quinine" and isolated it in crystalline form from its hiding place in cinchona bark. This later discovery came as a relief to the patient as well as to the physician, who was thus enabled to prescribe in-

telligently and in quantitative doses, instead of blindly dispensing a bark of unknown composition and potency.

For more than two hundred years, the cinchona supply came solely from South America. In 1854, the Dutch started their Javanese plantations, and a few years later the British experimented with cinchona culture in Ceylon and India. To-day Java furnishes most of the world's quinine supply.

The plant alkaloids, of which quinine is one, are hard to delimit and define. All of them contain nitrogen as well as carbon and hydrogen atoms. They are all weakly basic, and their water-soluble salts are frequently used in medicine. Most of them are characterized by marked physiological action on the human body. Depending upon their alkaloidal natures, this action may be mild, beneficent, and quite harmless—or it may be horribly toxic and deadly, striking like the thrust of a stiletto or the fang of a *fer-de-lance*. At one extreme we find a drug like *pilocarpine*, the alkaloid of *Pilocarpus jaborandi*, a West Indian and tropical American shrub, which causes perspiration, promotes the flow of saliva, and has the reputation of being a hair tonic. At the other end of the gamut, we find *aconitine*, the treacherous product of wolfbane, and a chemical relative of *coniine*, the alkaloid of "poison hemlock" which caused the death of Socrates. Quinine is a godsend. In the form of its sulfate it is poisonous to those diminutive protazoal parasites that cause malaria, but relatively harmless to their human hosts. It lowers the temperatures of fevered patients but does not affect those of healthy individuals. Thus it is known as an antipyretic, a "fire-extinguisher," an outstanding quencher of fevers. Of the twenty or more alkaloids related to quinine which are also found in cinchona bark, only three need be mentioned. The salts of *quinidine* have been used successfully in the therapy of the human heart. Those of *cinchonine* and *cinchonidine* have also found their niche in medicine. Their family skeleton, the parent of them all, is *quinoline*, a liquid, residing not in the Peruvian evergreen, but in coal-tar and in bone oil. Although not in itself an alkaloid, it is formed by the distillation of many of the plant drugs.

Peru boasts of another plant, a shrub, frequently growing in clearings of its forests, named *Erythroxylon coca*. For centuries, its oval leaves, flavored with the ashes of the *quinoia* plant, or with burnt lime, have steadied the nerves of the runners of the Andes. If a man chews the coca leaf, his sense of taste soon vanishes. Then the uncanny anesthetic action extends to the lining of his stomach, banishing the pangs of hunger. He feels exhilarated. His mental powers are sharpened and while retaining an illusion of well-being and of strength, he can actually undergo extended fasting and hardship. Needless to say such practices are dangerous. If the Andean is reasonably conservative, he may put up a bold front for quite a while. However overindulgence soon leads to emaciation, insomnia, and mental and physical breakdown.

The active principle of coca is the important anesthetic and stimulant, *cocaine*. Together with seven brother alkaloids it is housed in the leaf of the Peruvian shrub. By a relatively simple chemical process, these lesser kinsmen may be converted into cocaine itself. Painstaking research uncovered the "chemical architecture" of this alkaloid of the Andes, and since then other local anesthetics, less toxic and non-habit-forming, have been synthesized by the chemist and introduced into medicine and dentistry. Of these *procaine* and *butyn* merit attention. Both of them are far less dangerous and ordinarily far more effective than their Peruvian forebear.

By courtesy, The Wellcome Research Institution

Another of the famous frescoes from the hospital in Rome depicts Cardinal Juan de Lugo administering cinchona to the sick. In order to emphasize the solemnity of the occasion, a stately procession was formed. The Cardinal made a tour of the hospital, followed by his suite and a staff of physicians and apothecaries. This fresco bears the inscription: "The purple-clad father comforts the sick in this building with the fever bark of Lima."

Quite another series of drugs is obtained from the seeds of *Strychnos nux vomica* and *S. ignatia* (the St. Ignatius beans). They contain the alkaloids, *strychnine* and *brucine*. While strychnine in minute amounts serves as a useful tonic and stimulant, its action on the central nervous system is powerful and dangerous. Strychnine convulsions, when once witnessed, can never be forgotten. The horrible contortions of the sufferer are often followed by the ghastly *risus sardonicus*, the laugh of death.

Subtly related to the *strychnos* species are the "curare" arrow poisons of South America, tacky, brown extracts packed in bamboo tube, gourd, or clay-pot, the compounding of which remains the zealously guarded secret of each aboriginal tribe. Certain *strychnos* juices regularly enter into the composition of curare poisons, but neither strychnine nor brucine can possibly explain their unique and devastating behavior. Their fiendish action is traceable to another alkaloid, *curarine*.

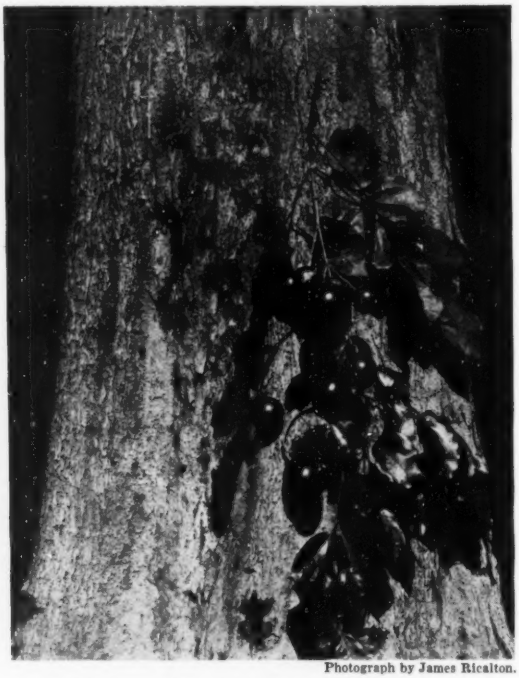
If a poisoned arrow finds its mark in a non-vital spot, the victim drops like a lead plummet. He is paralyzed! All motor activities cease, while his heart keeps on beat-

ing. There he lies on the ground, living, but helpless, and quite conscious of his fate when his enemies finally reach him.

Among the tropical woods used abroad in making shuttles and rulers is an ugly customer containing an alkaloid acting upon the heart and the motor nerves, a distant relative perhaps of the more formidable curarine. This is an inferior Knysna boxwood, *Gonioma kamassi,* indigenous to South East Africa. Careless workmen, covered with its sawdust, often find themselves in trouble. Symptoms similar to those of influenza and bronchitis frequently develop, followed by asthma and cold sweats. These effects, while less horrible than those of the arrow poisons, are sufficient to rank them among the industrial diseases of the British Empire.

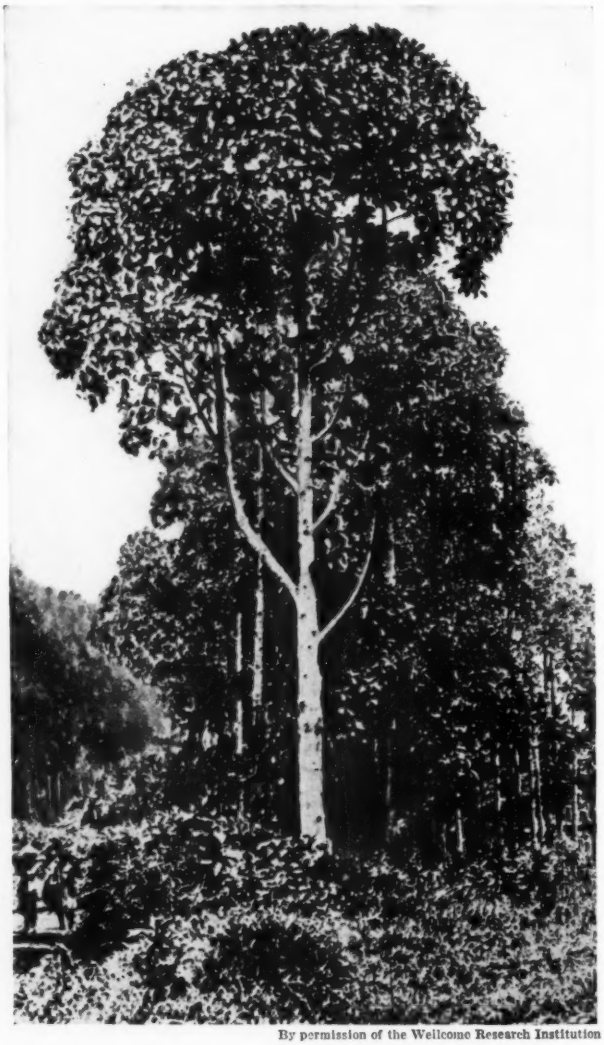
The lovely, hard, yellow, satinwoods, embodied in pianos and other musical instruments, and used in highly polished floorings and in beautiful inlays, would hardly be suspected of harboring an alkaloidal malefactor. Yet *Chloroxylon swietenia,* East Indian satinwood obtained from Ceylon, bears close watching. It contains the irritating *chloroxylonine,* the action of which becomes manifest in the dust of the shop. Certain sensitive laborers are subject to unpleasant inflammations—reminiscent of poison ivy—resulting from their contact with the powdered wood. Satinwood dermatitis is likely to reoccur and these encores are discouraging. Some workmen, however, are entirely immune to alkaloidal attack, and the wise foreman will recruit his satinwood shopworkers from the roster of these tougher "chloroxylonine-resistant" individuals.

Another wood that irritates some workers more than others is *cocobolo* of the *Dalbergia* species. Beautiful in its varying reddish tints and shades and in its rich purple markings, this forest product found a place over fifty years ago in certain delicate types of wood carving, and



Photograph by James Ricalton.

The trunk, leaves and fruit of the tree from which strychnine—one of the most powerful of drugs in its effect upon the central nervous system—is extracted.



By permission of the Wellcome Research Institution

A Cinchona tree (cinchona succirubra). It was from Luxa, Ecuador, then a province of Peru, that the first Cinchona or Peruvian Bark, was used by Europeans.

in the manufacture of tool handles, brush-backs and scientific instruments. But cocobolo, too, has its drawbacks. Within its cells lurks an undiscovered alkaloid or other chemical substance that seems responsible for an action similar to that of satinwood.

But enough of these alluring, toxic woods. A little more space should be alloted to those making positive rather than negative contributions to human health. Here however, we encounter a real difficulty, for an entire pharmacopœia might be written about the useful drugs obtained from shrub and tree. Our powers of selection might well be challenged and our errors of omission might return to haunt us. On this list we might place Indian sandalwood (*Santalum album, Linn*) which, when distilled with steam, gives the fragrant oil, *santalol,* that has played a role in the treatment of genito-urinary and pulmonary diseases. We might include the medicinal copaiba oil, from the oleoresinous secretions of the South American *Copaifera* species—secretions so bountiful that, at times, their accumulated pressure bursts the trunk of the tree. We could hardly fail to mention the celebrated oil of camphor, from *Cinnamonum Camphora,* nor (*Continuing on page* 348)

EDITORIAL

With or Without Codes—Carry On!

AFTER a scant year of enforced rules of scientific woods practice, the Code of Fair Competition for the Lumber and Timber Products Industries has been cast into the wastebasket along with a host of carefully conceived documents for other industries. As signed by President Roosevelt on March 23, 1934, the code included Article X, for the conservation of privately owned forests, with supporting clauses to which the President had given his personal attention. These promised a new era in American lumbering. Here was public recognition of the principle that America's natural resources are the heritage of the nation, to be conserved and utilized for the benefit of all the people. The lumber industry accepted the responsibility and by June first, in accordance with the terms of the code, rules had been adopted by the several regional associations providing for the administration and enforcement of woods practices to keep forests growing on forest land.

Among the results the Lumber Code Authority reports sustained yield management on more than three million acres of forest land. This involves protection of the forest as well as far-sighted plans for harvesting the timber. Another three million acres, or more, of similarly owned land was being considered for approval by the Authority and nation-wide efforts for more effective enforcement of the code's conservation features were in progress when the Supreme Court announced its decision on May 27.

No one is content to rest on these results, and with the President's expressed intention of continuing the broad social philosophy of the New Deal, we should consider the goals which may be achieved by constitutional means. Long before Article X was conceived and before the code was formulated, public leaders were considering ways of securing forest regulation. The public is now justified in demanding that conservation on private lands be continued.

Fortunately, most of the regional associations administering the Lumber Code have made formal statements of such a determination. This was substantiated on April 9 in a letter from Wilson Compton, Secretary and Manager of the National Lumber Manufacturers Association, to the Executive Secretary of the Society of American Foresters, in which he wrote,—"It is the intention of the National Lumber Manufacturers Association, as the original sponsor of the Lumber Code, to continue the forest conservation work, to seek the cooperation of the industry associations, and to seek needed public cooperation."

Meanwhile, how has the Federal Government carried out the plans set forth in the conferences called by Secretary Wallace on October 24, 1933? Helpful support has been given the cooperative program for protecting forest properties from fire, insects and disease through the Civilian Conservation Corps, an amazing program of land purchases has added nearly eight and one-half million acres to the National Forests of the eastern half of the country, and some progress has been made on a nation-wide survey of timber resources. Additions to federal appropriations for cooperative protection of forests from fire, as authorized under the Clarke-McNary Act, however, have been negligible and legislation recommended by the forest conferences and foreshadowed in public statements by the President has not materialized.

The vehicle to accomplish most of the principles of forest conservation is found in existing legislation, but like other vehicles, additions and changes are needed to meet modern social and economic requirements. A list of changes would include larger authorizations with supporting appropriations to complete federal and state responsibilities for cooperative fire protection; a permanent plan for providing credit to forest owners; state tax laws to meet the peculiar requirements of the forest industry; authorization for the Federal Government to cooperate with the states in purchasing lands for State Forests as proposed in the Fulmer bill which having passed the House awaits action in the Senate; an enlarged and expanded extension program whereby the Forest Service may cooperate with states and large private timberland owners to promote and encourage the establishment, renewal and utilization of useful timber crops; and a plan whereby the Federal Government through the Reconstruction Finance Corporation or similar agency may aid the states to finance deferred taxes on timberlands.

In letters to all state governors on January 2 President Roosevelt expressed intention of recommending to Congress legislation to cover some of these suggested additions. Later, under date of March 30, he wrote Senator Fletcher,—"I have only been awaiting the most favorable opportunity to present a program for the consideration of Congress. What I have in mind is a rounding out of existing legislation supplemented by new provisions and altogether something which will supply an organic basis, so far as we can now foresee it, for the next ten or fifteen years."

The present is not only an opportune but an imperative moment for action by the Federal Government. A definite, clear cut-statement by a spokesman of the Administration to the effect that the Government will carry through at the earliest possible moment its part of the compact as agreed upon at the conferences more than a year ago will do more to save and maintain the conservation work formulated by the Lumber Code than any other single thing.

ALL-WOOD HOUSES BY MACHINERY

Responding to the Need for Cheaper Housing, the Forest Products Laboratory Develops a Prefabricated House for Quick Mass Production

Photographs by the United States Forest Products Laboratory

AIRPLANE construction—the modern "stressed covering" system that makes airplane wings and fuselage strong, tough, and ultra-resistant—has been drafted into service in the home building field, and holds promise of replacing century-old saw-and-hammer methods of erecting wood houses.

Responding to the national need for cheaper, better housing, engineers of the Forest Products Laboratory, the wood research institution of the Forest Service at Madison, Wisconsin, have borrowed this device to meet requirements of a house built entirely of wood, yet stout and durable and adapted to modern low-cost housing methods.

Several years of research have resulted in the construction of a wood panel unit for walls, floors and roof which makes use of this construction scheme. The panel consists of two plywood sheets which are solidly glued to a light but strong inner framework. In the dead air space between the plywood sheets is an insulating material. All necessary wiring and outlets for electric equipment are also pre-built in the panel.

This prefabricated unit is of a type that can be made by machinery in a factory, is light enough to transport conveniently, and is big enough to insure rapid assembly into the walls, floors and roof of a house. Moreover, for all practical purposes the architect can create a wide variety of home designs with it.

By means of the new construction system, wood may be freed from the shackles of expensive handicraft methods of building, and the way is opened to what Forest Products Laboratory engineers hope will be a new era in low-cost wood house building. Such a development, they point out, will be directly in line with the progress that machine methods have brought to almost every other phase of modern living. To illustrate the principle in a practical small house, as well as to develop a construction scheme, Laboratory engineers built a demonstration home, which was shown at a Madison exhibit and was inspected by thousands of visitors.

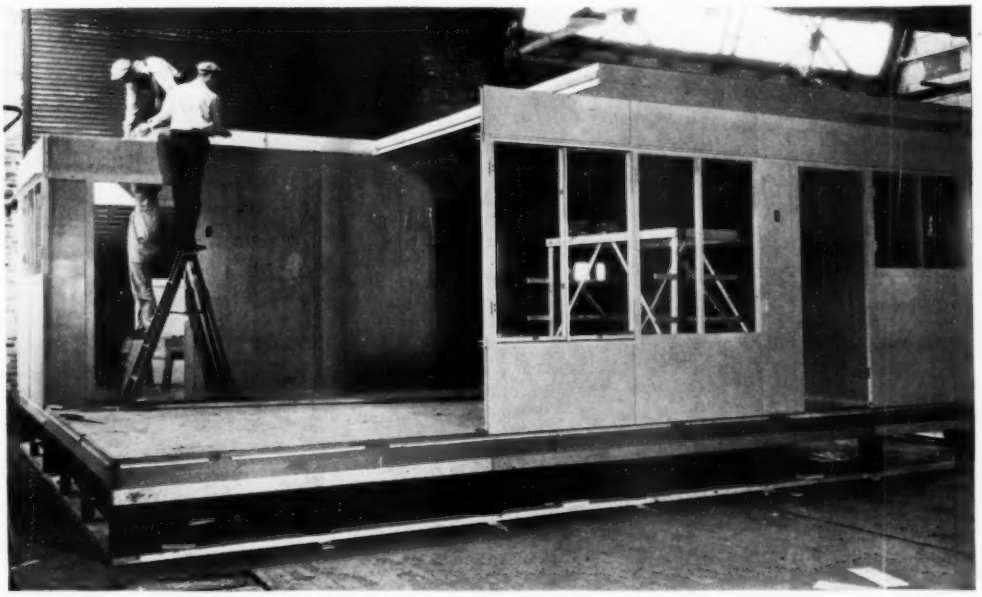
It would seem a kindly genii had presided over its building, for here we have the all-wood prefabricated house, complete and ready to receive its furnishings, after twenty-one hours' work by seven men.

It is built throughout of the "stressed covering" type of wood panel. The wall panels have an outer face of plywood specially coated to withstand the rigors of weather and an inner face prefinished as an attractive interior treatment. Floor panels are built to bear up under every likely and unlikely kind of load. The roof panels have an upper plywood deck designed to accomodate a flat weather-proof covering and a lower face finished into a ceiling in harmony with the wall interior.

Because of these panels the house is entirely without a

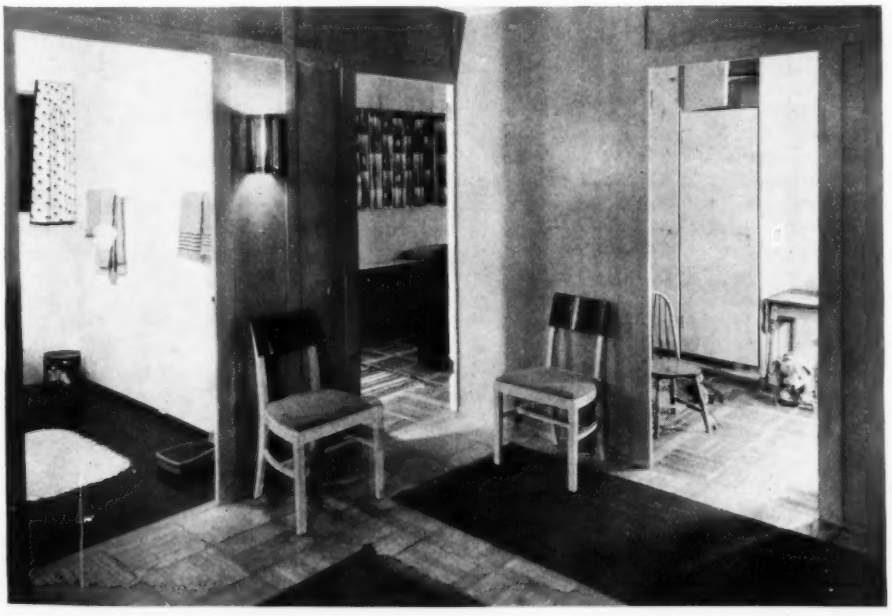
skeletal framework. Wall panels are held rigid, not by nailed timbers and studding, but by grooved posts or mullions into which the plywood edges of the panels fit. Doors and windows come ready-hung in their proper panels. Wall, floor and roof panels are all built to a standard width of four feet.

The secret of construction is gluing rather than the conventional nailing. In the ordinary floor or wall boards are nailed to a framework of joists or studding. These boards and the loads upon them are entirely supported by the framework to which they are nailed. They add little to the strength of the wall. In the new system plywood sheets are glued to the joists or framework of each panel. Because the glue gives a single solid connection, which mere nailing can never accomplish, the outer and inner faces of plywood combine with the framework to give what is for all purposes a single solid unit known to engineers as a box girder. Plywood, which consists of several sheets of veneer with each sheet glued to the next so that the grain runs crosswise, contributes a high factor of rigidity to the construction which insures great resistance to wind stresses.



Not only may savings be made in manufacturing time and material costs by the use of the prefabricated panel, but actual construction time and costs. The progress here shown in the erection of the prefabricated house was reached in five and a half hours.

Exhaustive tests have shown these panels to be far stronger than ordinary types of walls and floors. The roof can carry a crowd of people occupying every available foot of standing room and in addition an equal number standing on their shoulders. Moreover, the walls have considerably greater qualities of insulation than ordinary frame construction with lath and plaster interior finishing.



An interior view showing bathroom, bedroom, nursery, and corner of living room of the prefabricated house,—proving that attractiveness and beauty are not sacrificed to the advantages gained by this new type of construction.

Because it was designed only for developmental purposes and to demonstrate what can be done with wood, this model house is not yet a finished product ready for commercial manufacturing and marketing. But it has demonstrated several important considerations. It has proved that wood can be whipped into units by machine with the degree of accuracy required for assembly into houses. It has shown that the whole system of prefabrication incorporated in it for the first time is practical. It holds promise of great economy through mass production of its panel units, through elimination of waste and costly time spent in erection.

Moreover, it has directed Laboratory engineers into the concluding phases of research having to do with refinements of design and adjustments to manufacturing requirements.

LIGHT IN FOREST PHOTOGRAPHY

By RAYMOND A. WOHLRABE

THERE are certain hours of the day when a forest is more beautiful than at other times and there are certain parts of a forest that yield more attractive pictures than others. Naturally those are the times and the places the camera enthusiast welcomes.

To many a forest is just a forest, just so many acres of standing timber, or just a good place to fish and hunt. It is the nature lover's task, the nature lover who is also an amateur photographer, to build his forest pictures at those times and in those places where it means more than just these things. Forests have moods the same as do individuals and it is a record of these many moods that means much when fixed in the silver of a photographic film.

He who photographs forest scenes has the usual things to consider—shutter speed, the size of stop, the point of view. But if his pictures are to be above the usual run of pictures he must consider in addition to composition the light effects.

A good forest photograph can include other things besides trees. In many instances the picture is not of any great pictorial value unless it does. A photograph all trees becomes monotonous to the eye of the observer regardless of whether the trees are the redwoods of the Sierras, the Douglas firs of the Cascades, or the white-skinned birches of the Vermont hills. Interest in such a picture is drowned by the multiplicity of so many similar objects. There must be something included to break this monotony or the picture, as far as being of any pictorial value, is absolutely ruined. And if the forest is to be the important part of the scene these monotony-breaking objects must constitute a part of the background or a not too conspicuous portion of the foreground—or both. Seek out a forest nook where a lake occupies the foreground or a range of rugged mountain peaks looms up behind it. Perhaps you will say that if a picture is to be a forest picture mountains and lakes have no place in it. But is this true? Have not some of the country's forests the most beautiful mountain peaks within their boundaries? And is it not equally true that the logical place for a natural lake is in the heart of a forest? Then if forest pictures are really typical, really do justice to what they represent, are these things out of place in them? In reality they deserve almost as prominent a place in such a picture as the trees themselves!

A tool of the photographer that is used far less in forest photography than it should be is side-lighting. Its use enhances any landscape study which, when photographed in the usual way, is uninteresting and unattractive. Perhaps this tool is used so little by most amateurs because of some of the things that were learned when learning how to use the camera.

It is always good practice for the beginner in photography to follow the "law" so often laid down by the photo-supply dealer who sold him his first camera. He cautioned "Now be sure when you take a picture that the light is coming from over your shoulder." The beginner reasons that photo-supply dealers should know what they are talking about so he follows that advice. It is good advice for the days when experience is ironing out the difficulties encountered in the new hobby. If the source of illumination, which in most cases is the sun, is behind you when the picture is taken naturally there is going to be little danger of the film being fogged or overexposed by too much light entering through the lens. That is a good "law" for the early stages of your hobby's development—but it should not be a law to be followed indefinitely. The pictures to which it will lead will invariably lack depth. When you look at them it will not seem as though you were looking into a beautiful scene—you will get the idea that you are looking upon something flat, something lifeless. Breaking this first "law" of photography after the fundamentals of the hobby have been learned is one of the first steps leading to better pictures. This is just as true from the standpoint of he who photographs forest scenes as he who has chosen some other field as his favorite source of material. And the use of side-lighting is one of the things that develops after this "law" is broken.

HOUR OF PROMISE

I love the promise of the trees when winter strips them bare
Of all their autumn glory . . . for cradled in the air
Leaf-babes in soft scale-blankets are cuddled safely now,
Weaving a dream of springtime for every naked bough.

—Rowena Arthur Mills

If, sitting on the ledge of a mountain cliff, you have watched the changes that come over a forest as the sun slips down toward the west, you have marveled at the added beauty the lengthening shadows and the waning light develop. If in early morning you have followed a mountain trail into a forest enclosure where a fresh carpet of snow has been laid upon its floor and you have seen the patterns built of shadows that a rising sun works upon its surface, you again have found the forest at its best. Early morning and late afternoon are the two times of day that forests take on this added beauty. The light then builds contrasting shadow splotches that break the monotony of uniform illumination. The foreground is not a flat lifeless area across the front of the picture—each depression in its surface shows. The trees are not evenly lighted—there are bars of shadow across them from the branches of their neighbors. And in the mountains of the background patches and streaks of deep purple show distinctly the furrows and crevices that at midday do not show at all. These are the things the hunter of good pictures longs to catch. To get them at their best he should make his exposures in such a way that the source of light is at one side and the rays of it stream in across the scene.

Light in early morning and in late afternoon is not so

DEPTH WAS GIVEN TO THIS PICTURE TAKEN WITH SIDE ILLUMINATION--THE SHADOWS OF TREE TRUNKS BROKE UP ANY MONOTONY THAT MIGHT OTHERWISE HAVE BEEN THE RESULT OF A SIMPLE, WHITE SNOW FOREGROUND.

strong as at other times of the day. A longer exposure will have to be made then when photographs are taken. With a stop of around f5.6, or slightly smaller, and a shutter speed of one one-fiftieth of a second, good results will be obtained. In forest snow scenes, however, a very rapid exposure will be needed—an exceedingly small stop and a shutter speed of one one-hundredth of a second or faster, since the shadows are built upon a white surface and an ordinary exposure will give the snow so much time for the light it reflects, even in the shaded areas, to affect the film that in the finished picture shadows hardly show at all.

The forest is a wonderful field for the amateur photographer and, by studying its various moods, the changes which accompany the changes in lighting, it becomes a still larger field with an abundance of pictorial masterpieces waiting to be recorded on photographic film.

FIELD AND FOREST FOR BOYS AND GIRLS

MICKIE, THE MARVELOUS MINK

By LEAH F. COLLINS

The Lady of the House feeds Mickie.

MICKIE is small, lithe and dark brown, with movements somewhat like those of a kangaroo—a hop, skip and a jump. John discovered him curled in a grassy nest near the creek last June. It is likely that his mother was moving her brood at the time, hence the little mink's presence away from the burrow in which mother minks raise their young.

Mickie is a gentleman mink, but he talked too much that day. His hiss was what attracted John's attention, and his shrieks when he was picked up brought his mother hot-foot from the water.

"I just want to show him to the family," John mentioned soothingly. Mickie's mamma demurred.

"I won't hurt him," comforted John, but Mickie's mamma did not believe him. Nevertheless, John brought the baby mink home for us to see, and then returned him to his nest. Hours later John went back, but Mickie was still there. So he was adopted, all of us feeling like robbers until we learned that mink families are large and that Mickie's mamma probably had just one less wide and hungry mouth to feed now.

So small he could curl easily in a man's hand, Mickie drank from a medicine dropper at first. But before long he took his milk from a saucer. And, while we were still attempting to keep him on a liquid diet, he stole a fish from the kitchen table and graduated thankfully into the adult food class. An occasional meal of dogfood, bread, milk, or crawfish he would eat, but his choice was fish.

That first theft of his led to others, and not of fish, alone. Like a pack rat, he would pilfer anything that took his fancy, bread, crackers, string, peanut brittle, and potatoes. In his youth, he specialized in silk or wool hose from the clothes basket. He wanted to choose them himself, too—no gifts desired. Now, like a puppy, he takes slippers, but only those lined with sheepskin. He caches them with other treasures, behind a trunk, in a box, or in a corner. Yet with all his stealing Mickie has never destroyed an article. He tears up newspapers to make a nest, but that is all.

Though at first a mere baby, Mickie developed rapidly. He soon graduated from a milk diet to nice, juicy fish steaks. A cunning rascal, he endeared himself to us by his funny little ways,—withal a distinct individual, and somewhat of a thief.

Before long the kindling box, filled with treasures and torn paper, became too small for Mickie's activities; in fact, the entire house was. So a private domicile was constructed for him in the back yard, a log cabin eleven feet long and four feet wide, with wire beneath and a screen in part of both front and back walls. A box in the corner, with wool in it, formed his

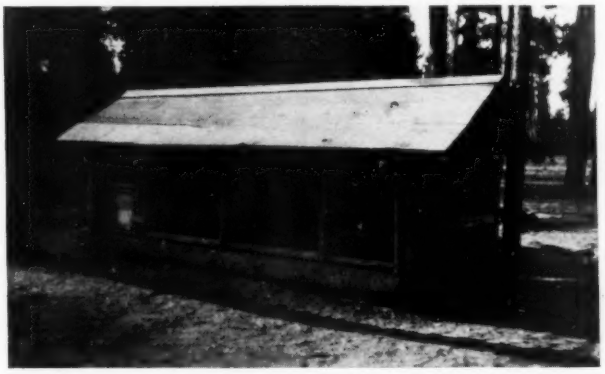
sleeping quarters, and there he cached whatever we gave him to play with and there he took most of his portable food to eat. He is a provident little soul, unlike domestic animals, for he eats only part of a fish at a time, saving some for a later meal. Probably his habit of caching bread and other eatables comes from the same instinct.

"Dunking" himself has been one of Mickie's most annoying habits. First it was in the water bucket. He even bathed most happily in soaking saucepans and I shall never forget what the He-Angel said the day I found Mickie wildly jumping from one water bucket to the other, and back again. "Well, it wouldn't be so funny if you had to carry that water,"—sadly.

His present favorite bathing place is my bean pot. Now that is an antique, bought for a quarter at a second-hand store. It has a hand-made pewter top with an elegant deer's head on it. One day when I removed the lid, in he popped. He has been popping ever since. At that time he was struck on a blue bowl, hand-made and all that. He used it for bathing, but the antique triumphed and Mickie now is not satisfied until he can have his brown bean pot half full of water. And what's more, he can even remove the top with his rooting nose, just as he can take off the tight lid of a lard pail when it contains anything he wants.

Some manzanita buds were placed in an old earthenware churn and Mickie espied it and set himself for a bath. But, try as he would, he could not insert himself in the churn while those stalks were in there. Suddenly he was inspired and, taking hold of each branch separately, he dragged them from the churn, laid them in a pile, and popped in for a dip.

Mickie has four noises. First is his chuckle, which sounds like a hen calling her chickens and sometimes like an over-wrought telegraph key. This is his happiest noise. It seems to mean, "Oh, what a smart mink am I," and he uses it continually when he is in the house, or being talked to in his own place. Then there is his hiss, which means, "Keep away," or, sometimes, "I know I shouldn't be doing this, but just try and stop me!" He hisses when you try to prevent him from doing anything, or when you attempt to catch him to put him out in his own house. His bark, the nearest word to describe this sound, is used to attract attention and as a cry for "a little food, please." Lastly is his squeal, the only unpleasant sound he makes. It says, "I hate you, and I wish that I could bite you!" We first heard it when he saw a cat. He hated cats. He fairly yelled at them, but that stage has passed. Now they watch him eating his fish, longingly, and Mickie just chuckles.



Mickie soon outgrew his kindling-box home, and a wider cruising radius was afforded him by building this log cabin, eleven feet long, in the back yard. Here he cached his portable food and various acquired belongings, and played to his heart's content.

Chum, the collie, however, is Mickie's hero. At first, the dog would allow Mickie to crawl over him, burrow in his long hair, try to get in his ear and paw his nose. But, as the mink grew older, nipping became his way of playing and Chum would not willingly stand having his ankles snapped at.

We know that Mickie has never bitten us in anger. He plays with us, as with Chum, (*Continuing on page* 352)

TREES AND THEIR USES

No. 7 - - - WILLOW OAK

WILLOW OAK IS FOUND IN THE EASTERN STATES FROM SOUTHERN LONG ISLAND, NEW YORK, TO FLORIDA, AND IN THE SOUTHERN STATES THROUGH TO TEXAS. THE THIN, YELLOW-GREEN, WILLOW-SHAPED LEAVES ARE NOT TYPICAL OF AN OAK, AND MAKE THE TREE EASY TO IDENTIFY
THIS TREE OCCASIONALLY REACHES A HEIGHT OF 80 FEET WITH A TRUNK DIAMETER OF FOUR FEET. IT REACHES ITS FINEST DEVELOPMENT IN THE GULF STATES AND GROWS WELL ON LOW RICH LAND NEAR THE COAST AND SWAMP LANDS
THE ACORNS OF THE WILLOW OAK ARE SMALL AND CLOSELY SET ALONG THE STEM. BLUE JAYS, BLACK BIRDS AND OTHER SPECIES OF BIRDS EAT THEM AS FOOD
ITS LUMBER HAS NO GREAT COMMERCIAL VALUE BUT IT IS USED FOR INTERIOR FINISH, FRAMES, SLACK COOPERAGE, FLOORS, WHEEL HUBS AND GENERAL CONSTRUCTION
WILLOW OAK IS A BEAUTIFUL AND LONG LIVED TREE WHICH ADAPTS ITSELF TO WET SITUATIONS. IT IS DESIRABLE FOR ROADSIDE, LAWNS AND PARKS. ITS BEAUTY AND RICH SHADE SEEM REMINISCENT OF SPACIOUS LAWNS AND THE ROMANCE OF THE OLD SOUTH

WILLOW OAK

Quercus Phellos. Linnaeus

Willow oak has a strong central trunk supporting numerous small side branches from which grow many small spur-like branchlets, resembling those of the pin oak.

WILLOW OAK lays no claim to size or majesty, but its round-topped symmetrical crown, rapid growth and long life place it among the most attractive of the red oak or black oak group. Occasionally, in the moist fertile portions of its southern range it attains heights of 100 to 120 feet and diameters at breast height of three to five feet. Over most of its range, however, it is usually forty to fifty feet high with a full clear trunk fourteen to twenty inches in diameter, frequently rising intact through the crown. The side branches are slender like those of the pin oak and the lower branches droop or dip down at the ends. The side branches persist except in dense shady stands.

Under forest conditions it develops a tall, straight trunk and a full symmetrical crown. The trunk prunes itself slowly, leaving many small live and dead branches which form knots in the wood and greatly reduce the clear merchantable length.

It thrives on poorly drained bottom lands that are normally covered each winter with shallow water, occurs in rich moist soil along the margins of streams and swamps, and also on higher land. It grows from southern Long Island and Staten Island in southeastern New York chiefly along the maritime plain to northeastern Florida, through the Gulf Region to the Sabine River Valley in eastern Texas and north through eastern Oklahoma, Arkansas, southeastern Missouri to central Tennessee, southern Illinois and eastern Kentucky. Reaching its largest size and greatest abundance in the lower Mississippi Valley, it grows in company with other oaks, hickory, tulip tree, maple and elm. It is so frequently found along wet margins of streams and swamps as to be erroneously known as swamp oak, or water oak. The abundant short spur-

The full, round, slightly conical crown of willow oak is frequently forty to fifty feet high and may attain a height of one hundred feet or more.

like branchlets on the lower branches have led to wide use of the name pin oak.

Willow oak gets its name from the long, narrow, lance-shaped or occasionally scythe-shaped vivid light green leaves, which in shape as well as color resemble those of a willow more than an oak. In texture, however, they are thicker and more leathery. They are pointed at both ends, two and one-half to five inches long, one-fourth to one inch wide with a short stem or petiole and a slender yellow midrib. The shiny light green of the upper side is mildly contrasted by a lighter green below. In the South the tree is nearly evergreen, and the leaves never attain the bright autumnal colors of the red, pin and scarlet oaks but turn a pale yellow before falling. The long narrow entire leaf, which is common to only a few other oaks, leads occasionally to the common name—peach leaf oak. Willow oak may be confused with the true water oak, *Quercus obtusa* Ashe, the laurel oak, *Quercus laurifolia* Michaux, and with shingle oak, *Quercus imbricaria* Michaux. The leaves are smaller, narrower, without hairs on the under surface, and of almost uniform width. The acorns of laurel oak are larger and the cups not so flat as those of willow oak.

The flowers are each of a single sex and are found on all parts of the tree,—the male catkins on last season's growth and the female flowers in the axils of the new leaves. They appear in late March in the South. Farther north they appear in April or May and continue in evidence for two or three weeks. The pollen from the pistillate blooms, which are like yellow green knots along the two to three inch stems, is carried by the wind to fertilize the pistillate flowers. These stand on short, slender, smooth stalks or peduncles at the base of the leaves. Characteristic of the red oak or black oak group, it is the fall of the second season before they mature into hemispherical, light yellow-brown acorns about a half inch long set less than a quarter of their diameter in a thin saucer-shaped cup. This in turn is covered with thin elongated scales, and the inside is lined with a mat of fine, white hairs. The acorn is held to the twig by a short stalk, and the meat is bitter with tannin.

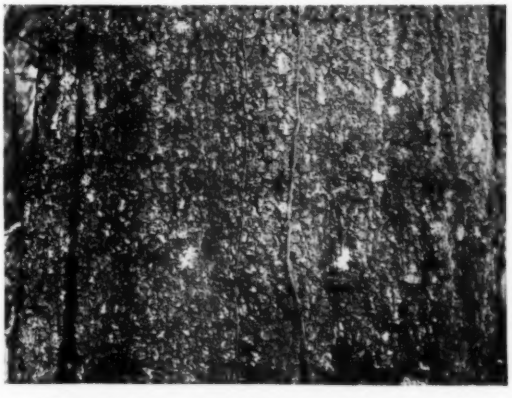
Dark, chestnut brown, narrowly conical winter buds about an eighth of an inch long and without angles are borne alternately on smooth, slender, reddish brown twigs marked with dark lenticels or breathing pores. Each of the numerous, well defined bud scales is edged with pale gray or white.

The red brown to steel gray bark is a half to three quarters of an inch thick, generally smooth and very hard. On large mature trees it is nearly black, broken into rough, hard ridges and irregular plates by narrow fissures. *Phellos* comes from a Greek word referring to cork and was used to refer to the oak long before the name was accepted by Linnaeus. It has no reference to any special corky quality of the bark.

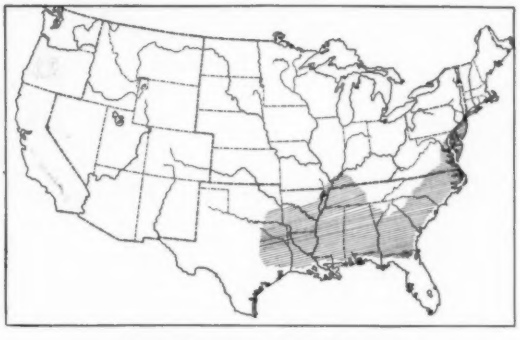
The strong, heavy, close-grained wood is reddish brown and resembles that of red oak, with which it is most frequently marketed. In the Mississippi delta region it is of considerable commercial importance but there are no reliable estimates of the available stand of this species. It weighs about forty-five pounds to the cubic foot when air-dry. This is about the same weight as white oak, but its strength is only eighty-six per cent of that wood. It is used for interior trim, house frames, doors, floors, slack cooperage, and railroad ties.

Willow oak is hardy as far north as Massachusetts and in the South Atlantic and Gulf States is recognized as one of the best of the quick growing trees for street, and ornamental planting. The comparatively shallow root system helps make it easily transplanted. Trees twelve to fifteen feet high may be dug from the woods and successfully grown but well rooted nursery-grown stock is more satisfactory for ornamental planting. Although with few enemies, trees are occasionally seriously retarded by scale insects which feed on the tender bark of twigs and small branches.

The narrow light green leaves, two and one-half to five inches long and pointed at each end, resemble those of a willow more than an oak.



The relatively smooth brown to dark gray bark is one-half to three quarters of an inch thick.



Natural range of the willow oak.

AROUND THE STATES WITH THE AMERICAN FORESTRY ASSOCIATION

Wallace and Ickes Disagree on Forestry's Relation to Agriculture

"A clue to a sensible division of labor with respect to governmental administration of natural resources is found in a phrase of Theodore Roosevelt's,—'problems relating to growth from the soil' ", declared Secretary Henry A. Wallace in letters to the chairmen of the two Congressional Committees considering S. 2665 and H. R. 7712—bills to change the name of the Department of the Interior to the Department of Conservation and Works and to coordinate certain governmental functions.

"Our natural resources," the Secretary said, "divide naturally into two groups, the inorganic, or non-renewable, and the organic, or renewable. The former, for the most part, are sub-surface resources. They call for the most enlightened chemical and engineering methods, and demand the highest form of stewardship. The organic group, on the other hand, are subject to the laws of 'growth from the soil,' and can no more be segregated from the principal user of the soil—agriculture—than the human body can function with the heart taken out of it. These organic resources are subject to man's control. Their reproduction and increase depends on the degree to which he understands and applies nature's creative laws. Their conservation depends not merely upon man's ability to keep them intact, but upon his ability to maintain and to make more productive the creative relationship between the soil and plant and animal life."

In another part of his statement the Secretary of Agriculture said, "The immediate effect of S. 2665, I am afraid, would be to arouse suspicion among farmers that their national farm program, and their national land-use program, might be lost in the shuffle of governmental reorganization. Most farmers, I think you will agree, do not need to be convinced of the merits of conservation. They have to be practicing conservationists if they hope to keep on getting a living out of their soil. But they view the goal of conservation as an inherent part of any sound agricultural program.

"Likewise in government the objective of conservation ought to pervade countless agencies and activities. . . . But to expect to concentrate all the conservation activities of government in one department seems to me neither possible nor desirable. No one government department can presume to have a monopoly on a basic principle of social action, which is what conservation really is."

In response to this letter and to the testimony of Chief Forester F. A. Silcox, acting as the representative of the Secretary of Agriculture on June 4, Secretary Ickes said:

"We are simply asking," explained Secretary Ickes, "that the name of the Department of the Interior be changed to that of Department of Conservation and Works as being more properly definitive of our natural functions, and that you authorize the President to transfer agencies to and from the Department with the consent of Congress. The President had such authority for two years without doing violence to orderly government. The particular agencies, if any, to be transferred under this bill would be a matter between the President and the Congress after the President had carefully considered whether, in the interest of good administration, any changes should be made."

In another part of his statement Secretary Ickes said,—"While there is a scattering of conservation activities in other government establishments, no single agency is concerned so completely with this important subject. Some of them, like the Department of Agriculture, have a special field touching on conservation in a limited way which should not conflict with a general conservation program. The primary purpose in establishing that Department was to promote crop production which comprehended bringing more acreage into use and increasing the yield per acre."

Oxley C. C. C. Educational Director

Howard W. Oxley, educational adviser for all camps in the Second Corps Area, with headquarters in New York City, has been named educational director of the Civilian Conservation Corps, succeeding Clarence S. Marsh, who resigned May 1 to become associate director of the American Council on Education.

Howard W. Oxley

To his new position, Mr. Oxley, who is thirty-eight years old, brings a wide and varied experience. He was high school principal at Hardin, Missouri, superintendent of schools at Jerico Springs, Missouri, professor of psychology at Iowa State College, and educational adviser to the Government of Liberia, West Africa, and to the Advisory Committee on Education in the same country.

As educational director of the Civilian Conservation Corps, with headquarters in the Federal Office of Education, Mr. Oxley will promote the educational program in which more than 170,000 enrollees are now voluntarily enlisted.

Inclusion of Jackson Lake in Grand Teton National Park Defended

Commenting on the proposed extension to the Grand Teton National Park, in Wyoming, Arno B. Cammerer, director of the National Park Service, declared in a letter to Doctor Henry B. Ward, permanent secretary of the American Association for the Advancement of Science, that "if a Teton bill is introduced in Congress with Jackson Lake excluded, it should not receive the approval of the Service."

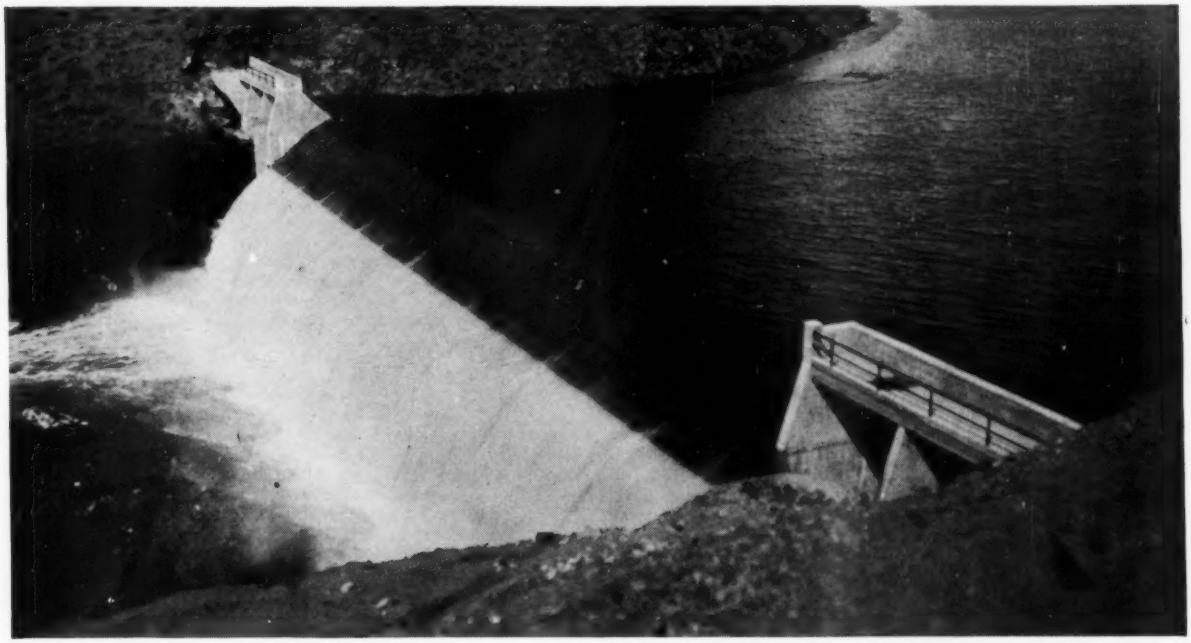
On June 3, Senators Carey and O'Mahoney, of Wyoming, jointly introduced S. 2972 which, while adding to the National Park, approaches the Jackson Lake reservoir only on the southern and western shores, and does not include the reservoirs known as Two Ocean Lake and Emma Matilda Lake. These, together with the land abutting on the northern and western shores of Jackson Lake, are left in the Teton National Forest, and to that extent the bill meets some of the criticisms voiced against Senator Carey's earlier bill by the National Parks Association and other organizations.

With particular reference to the Jackson Lake reservoir, the inclusion of which within the National Park area was the principal subject of discussion in a special report by a Committee of the National Parks Association, Mr. Cammerer wrote: "The National Park Service is unequivocally opposed to construction of power and irrigation reservoirs within National Parks and Monuments. If any precedent is involved, that is the precedent by which we stand. The damming of Yellowstone Lake or of Grand Lake in Rocky Mountain should be resisted by the united efforts of all conservationists. Such projects are destructive of superlative features which the parks were created to protect.

"But, the construction of a new reservoir which means violation of another great scenic area, is a very different thing from the attempt to save a previously violated area from further exploitation! And that is the crux of the whole question. Exploitation of park waters is not involved in the Jackson Lake question. The reservoir is already there. . . . We would not change that fact any by drawing the proposed boundary of Grand Teton so as to escape the lake. . . . It would be the same as re-drawing the boundary of Yosemite to exclude Hetch Hetchy reservoir, which would likewise help the situation not one bit. Moreover, it would be establishing a very dangerous precedent, namely: that there can never be established a suitable park unit because of previous commercial exploitation. If our standards are to endure, they must be translated into acts of conservation.

"Certainly it would be far better to have Jackson Lake, which is in the heart of the area, protected from further exploitation by including it within the park than to leave it unprotected by excluding it. In the latter case, the reservoir would still remain as a thorn in the side of the park, about which we could do nothing.

"The National Park Service deplores the existence of Jackson Lake reservoir, as you do. We are not advocating its inclusion within the park because it is an artificial lake, but in spite of it."



How DYNAMITE *helps to Build Dams*

THE building of dams to control floods, to produce power, to aid navigation and to irrigate land is certainly one of the most important of the government's many construction projects. Not only are all of us immediately benefited, but so are generations to come.

Without the help of dynamite, these works could never even be started . . . much less completed. Consider how dynamite aids in every step of dam building.

FIRST—DYNAMITE clears the site. Loose boulders, trees, tons of earth must be removed before the real construction work begins;

SECOND—DYNAMITE blasts diversion tunnels to carry water around the site;

THIRD—DYNAMITE blasts out the excavation for the foundation;

FOURTH—DYNAMITE shapes the channeling to key the concrete;

FIFTH—DYNAMITE quarries the rock for the concrete aggregate.

Du Pont explosives and du Pont methods of using explosives have been used in the construction of dams for more than a hundred years. Du Pont engineers have collaborated with government officials and hydraulic engineers in the construction of most of the great dams built. We will gladly place our experience at your disposal. Write us. We can surely be of help to you.

DU PONT
REG. U. S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., INC.
EXPLOSIVES DEPARTMENT, 6107 DU PONT BUILDING, WILMINGTON, DEL.

For over 50 years this splendid pine has withstood the storms and grown to attain its position of outstanding prominence.

It well illustrates the position of *KELLY AXES* . . .

For over 50 years they have sustained their reputation for DEPENDABLE QUALITY.

AXES
BUSH HOOKS
FIRE RAKES
GRADING HOES

TRADE MARK
TRUE TEMPER
KELLY QUALITY

FOREST
FIRE
FIGHTING
TOOLS

MANUFACTURED BY
THE AMERICAN FORK & HOE CO., Cleveland, O.
(Any Hardware Dealer Can Supply)

FOREST SERVICE GETS WORK RELIEF FUNDS

The approval of an allotment of $13,827,500 of work relief funds to the Forest Service was announced by the President's Allotment Board on June 10. When final approval has been given by President Roosevelt, detailed information concerning the manner in which it will be expended will be announced. Meanwhile, it is understood that large portions will be used for improvements on the National Forests for the shelterbelt, to cooperate with the state in forest protection improvements on privately owned land, and for forest research. A portion will also be used to continue the program of forest acquisition by the National Forest Reservation Commission.

An earlier allotment of $500,000 to the Forest Service has been used to pay for work done in land surveys and appraisals preparatory to purchase for forest purposes. The Board also approved $110,000 for research to be conducted through the Civilian Conservation Corps on the control of forest insects and diseases. This will be planned and supervised by the Bureau of Entomology and Plant Quarantine, of the Department of Agriculture.

No decision was reached by the Board regarding a $2,500,000 request which is understood to have been submitted for the eradication of Dutch elm disease by the Bureau of Entomology and Plant Quarantine. Thus far only $250,000 has been allotted for this purpose. Officers in the Bureau estimate that this relatively small sum may carry on work in the infected area for approximately one month. The larger sum is necessary to clean up all infected and suspected elm trees in the infected zone in lower New York and adjoining parts of Connecticut and New Jersey.

The same bureau has filed an application for an allotment of $6,378,735 for controlling white pine blister rust by the systematic eradication of currant and gooseberry plants in twenty-eight states. In submitting the request, the Department reported that progress has been made in controlling the disease on the 14,200,000 acres of commercially valuable stands of white pine, containing nearly 70,000,000,000 board feet, with a stumpage value of $400,000,000. During the past year, similar work was organized throughout the white pine areas of the East, Middle West, and Inland Empire of Idaho and Montana. The work of men on relief rolls was effectively supplemented by the Civilian Conservation Corps.

The National Park Service has applied for an allotment of $3,444,132 from work relief sources, to finance a survey looking toward the establishment of a nationwide chain of camping, hunting, fishing and recreational areas. It is stated the survey would furnish employment during the summer and fall for 4,696 workers now on relief.

NEW IVORY-BILLED WOODPECKERS FOUND

Discovery in the South of ivory-billed woodpeckers has been reported by the National Association of Audubon Societies. The exact location of the discovery has been withheld by the association until adequate measures have been made to protect the birds from collectors.

The ivory-billed woodpecker is probably the rarest bird in the United States. In addition to the newly discovered location, ivory-bills are definitely known to exist only in Louisiana.

The latest discovery was made by Alexander Sprunt, Jr., and Lester L. Walsh, both members of the Audubon Association staff.

Although it formerly ranged over the South Atlantic and the Gulf States from North Carolina to Texas, north into the Mississippi Valley to Missouri and in southern Illinois and Indiana, the ivory-billed woodpecker began to vanish as early as 1869, when Indiana reported the disappearance of the last birds known to be there. They disappeared from Oklahoma in 1884, from Arkansas in 1887, from Missouri in 1895, from South Carolina in 1898, from Alabama in 1907, and from Florida in 1924.

TRAIL RIDERS GET UNDER WAY IN JULY

The first expedition of The American Forestry Association's "Trail Riders of the National Forests" will get under way from Missoula, Montana, on July 9. At the time of going to press, places in this expedition, the first of three to be made this summer, had been reserved for twenty-one riders.

The explorers will spend twelve days in the Flathead-Sun River Wilderness, the great primitive area of the Flathead and Lewis and Clark National Forests. Leaving Missoula by motor on the morning of July 9, the party will answer the call of "boots and saddle" at Monture Ranger Station where the road ends, forty-five miles from Missoula. From there they will approach the Continental Divide, crossing it near the southern end of the Chinese Wall.

After a day exploring the Chinese Wall, the party is scheduled to reach the summit of Pagoda Peak on July 16. From the summit of this mountain, more than 10,000 feet above the sea, a descent will be made to the famous Big Salmon Lake and thence to picturesque Holland Lake, crossing the rugged Swan Range en route. The trail trip will end on July 19 at Lake Lindbergh.

As Expedition No. 1 gets under way, parties are forming for Expeditions No. 2 and No. 3. Riders on Expedition No. 2 will leave Chicago on July 28 for the Top Country of Wyoming —the little known and spectacular Wind River Wilderness in the Wyoming National Forest. Expedition No. 3, into the Gila Wilderness of New Mexico, the land of the American aborigines which has held its primitive character through many centuries, will get under way from Silver City on August 21.

With twenty-one riders scheduled for the first expedition but a few places remain, as the maximum number of twenty-five riders will be strictly adhered to. Therefore, those desiring to ride with this first group are urged to wire The American Forestry Association immediately for reservations. Those contemplating Expeditions No. 2 and No. 3 are also urged to make immediate reservations.

Organized by The American Forestry Association as a means of public exploration of the remaining wilderness areas in America, the Trail Riders of the National Forests have been highly endorsed by the United States Forest Service and other leading conservation and outdoor agencies. Just recently, the newly organized Wilderness Society, at its inaugural meeting, endorsed the expeditions and officially greeted the Trail Riders as follows:

"The Wilderness Society greets the Trail Riders of the National Forests, wishing them successful journeys this summer into the vast primeval areas where The American Forestry Association has planned their travels. They will traverse some of the very country which we hope to safeguard from invasion by road and motor—mountains of grandeur, primitive forests, rivers unexcelled in wild beauty."

Pymatuning Lake to Be Developed

Pymatuning Lake, in Crawford County, Pennsylvania, constructed originally as a flood control reservoir, will be "dressed up" with the idea of developing it into one of the greatest recreational areas in the eastern part of the United States, according to Ralph M. Bashore, Secretary of the Department of Forests and Waters.

The work will begin almost immediately with the assignment of two new C.C.C. camps in the area, one each at the extremities of the mammoth reservoir. Preliminary plans call for three distinctive developments along the lake's seventy mile shore line.

Colonization will begin at the southern point of the lake front near Turnerville, and at a point near Linesville in the extreme northern end. Another development in the preliminary plans is charted midway on the eastern shore of the lake. When this work is finally completed there will be swimming, fishing, boating, golfing, skating, and many other forms of recreation.

Xylologists Elect S. J. Record

Professor Samuel J. Record, of the Yale School of Forestry, has been reelected secretary-treasurer of the International Association of Wood Anatomists for a term of three years. This Association, which was founded at Paris in 1931, is composed of the foremost xylologists of twenty-five different countries. The activities of the Association are directed by a council of twelve members, now of nine nationalities. On this council are three Americans—Professor I. W. Bailey, of Harvard University, Arthur Koehler of the United States Forest Service, and Professor Record.

The Association is sponsoring a cooperative systematic study of the woods of the entire world, centering about the Yale collections, which now contain thirty thousand specimens. Universal standards are being set up for this work and a dictionary of terms will soon be published in ten languages. The Association will convene in Amsterdam, Holland, next September in connection with the Sixth International Botanical Congress.

"The Strongest Geared Power for Its Weight in the World"

ALL STEEL HAND HOIST
SEATTLE U.S.A.

Weight 110 Lbs.
Capacity
Five Tons
Straight Line

2 Speeds—4:1 and 24:1. Positive Internal Brake. Size 16 in. x 17 in. x 13 in. high.
This compact unit is invaluable in land and trail clearing, lookout tower erection, bridge building, boulder and timber handling, or any other pulling, lifting or lowering operation. Over 10,000 in use, including many in Forest Service.
Price $75.00. Tail Hold Yoke $4.00 Extra.
Warehouse Stocks—Chicago, Brooklyn, New Orleans, Houston and Seattle Factory.
Dealers in all principal cities.
Full descriptive literature gladly mailed.

BEEBE BROS.
Incorporated
2724 6th Ave. S. Seattle, Wash.

Little Giant Fire Fighter on Two Wheels

Equipped with a Powerful 16 Horse Power Engine and a New Rotary High Pressure Fire Pump..... **$395**

Engineering Excellence Is Apparent, Even Astonishing

Capable of SEVENTY-FIVE gallons of water a minute (nearly two barrels) and ONE HUNDRED pounds pressure, it is indeed a fire fighter! See it in action and it will win your respect—your admiration!

Or at ONE HUNDRED FIFTY pounds pressure watch it bore a stream into burning rubbish, hay, straw, etc., or rip shingles off a burning roof.

Just one 2½ gallon hand extinguisher, with which we are all familiar, looks impressive. But think ◄ this mighty portable apparatus equals 30 such extinguishers EVERY MINUTE. In other words, 30 men each with a hand extinguisher would lay 75 gallons on a blaze and then, exhausted, would have to quit. But this powerful Fire Fighter can deliver 75 gallons a minute right along ◄ 750 gallons every ten minutes.

The fire streams it throws are far reaching: to the roofs of 3 and 4 story buildings; as much pressure as from heavy motor driven apparatus costing thousands of dollars and intended only for big city use. ◄ It's so lightly balanced, on a ball bearing axle with pneumatic tires, that men run with it—NO EFFORT AT ALL—and men can, on short spurts, do 20 to 25 miles per hour.

Built to the Same Design as Fire Trucks by Our Fire Apparatus Engineers

• Look it over and you'll find a steel frame chassis mounted on a sturdy hollow steel axle, carrying shock absorbers. Pneumatic tire wheels with roller bearing. It rolls so easy one might say it glides or floats along.

• On the chassis is mounted a 16 H.P. FOUR CYLINDER motor. It's a big powerful 4 cycle engine that easily turns the pump at 1,000 R.P.M. It's AIR COOLED, no water to fuss about, it won't freeze, and has electric magneto ignition, etc. Really everything so that it is a self-contained power plant—always ready to go at the turn of a crank; no batteries even to watch or fail.

• The gas tank carries about 4 gallons—enough to keep it going for hours. Gravity feed direct to the carburetor.

• The speed is GOVERNED ◄ regardless of whether the pump is throwing water or is shut off, the engine won't race. Marvelous—it's just the motor for the job. Net weight of motor, big and powerful as it is, amounts to only 230 lbs. or only about 14 lbs. per horse power. We don't believe a better engine can be built at any price.

• The pump is as compact a unit as you ever saw. Positive displacement type, same as used on fire engine. Built for high fire pressures.

• OPERATION: It is a simple matter to connect suction hose, lay fire hose and start the motor. Fire hose, as much as 400 feet, is carried coiled in the tank above the engine. This hose is flax, very strong, long lasting and MILDEW PROOF.

◄ At some fires water is scarce and only obtainable from deep wells. This can be pumped into buckets or milk cans and emptied into the booster tank above the engine (see illustration). From the booster tank the pump takes it and forces it through the hose at high pressure. ◄ A ¼" tip at 160 lbs. pressure, using only about 20 gallons a minute, is very effective as a whip stream.

• As the pump has TWO discharge outlets, for two fire streams, we suggest two nozzles, one ¼" tip and one ⅝" tip and 200 or 300 feet of 1½" hose or more. Because this special hose is light, easily carried, firemen do fast work by getting INTO buildings, up stairways, into attics, etc., and to the heart of the blaze.

• For Forest Fire work the apparatus can be trailed by any car or lifted into trucks and carried to the front. On such fires it will pump DAY and NIGHT, through long lines of hose, without stopping and with little effort.

EQUIPMENT: Besides Engine and Pump mounted on chassis, our price includes a 20 foot complete 2" Suction Hose Outfit with brass couplings and Strainer; 300 lb. Pressure Gauge; Brass Caps on Suction Connections and Discharge Valves; Tool Box; 2 Fire Dept. Electric Lanterns, etc.—everything as you see it illustrated except fire hose, hydrant connection and nozzles, which are quoted separately.

Ordering Apparatus and Equipment

No. D440. Portable Fire Engine. Complete as illustrated and described above, f.o.b. Chicago **$395.00**

No. D441. Fire Hose. Special 1½" size, FLAX, MILDEW PROOF, with polished brass couplings attached to each 50 foot length. Per length..... **$16.50**

No. B918. Colt Nozzles, quick action, with shut-offs. Polished Bronze, with ¼", ⅜", ½" or ⅝" tips, each..... **$10.25**

No. D442. Brass Hydrant Coupling for connecting suction hose to fire plugs. ◄ Send a sample of your hydrant thread, as we make these to order only. Each..... **$4.25**

◄ Net weight of apparatus on wheels 592 lbs. Shipping weight crated approximately 650 lbs.

W. S. DARLEY & CO

☞ EVERYTHING IN FIRE PROTECTION EQUIPMENT

☞ ON REQUEST OUR WONDERFUL CATALOG WITHOUT CHARGE

2810 Washington Blvd. CHICAGO, U. S. A.

SLEEP IN COMFORT

● Wherever you go—Canada, the Rockies, or *anywhere*—be it by pack trip, auto or canoe, or whether you sleep in cabin, tent or open air, there's nothing so practical or warm as a Ta-Pat-Co Sleeping Bag. They're adjustable to temperature, double-waterproofed, light and compact. Far better than the old "cowboy bed." Filled with enough buoyant Kapok to float four men. (Acts as life preserver.) Hygienically constructed. Perspiration filters through Kapok and escapes through tiny pores in the covering. Insures a healthy, warmer night's sleep. Bought in quantities by U. S. Government. Cool sheets or warm plaid blanket lining. Patented mosquito proof and "varmint" proof netting attachment and Airubber mattresses, if desired. Bag illustrated, $21.00; with 100% wool blanket lining, $29.00. Complete range of Sleeping Bags from $7.85 to $31.00. See your dealer today.

Send for *free* folder or order bag shown direct.

The American Pad & Textile Co.
Main Office and Factory, Greenfield, Ohio
New York Office, 14 Pearl St., New York City

Ta-pat-co
TRADE MARK REGISTERED U.S. PAT. OFF.
SLEEPING BAGS

THE AMERICAN PAD & TEXTILE CO.
Dept. K-7, Greenfield, Ohio, or
Dept. K-7, 14 Pearl St., New York City

☐ Herewith $21.00 for Style 57 Sleeping Bag.
☐ Please send me free Ta-Pat-Co folder.

Name.....

Address.....

City and State.....

Designed by Woodsmen for Comfort and Wear

University of Maine

Orono, Maine

The Forestry Department offers a four-year undergraduate curriculum, leading to the degree of Bachelor of Science in Forestry.

Opportunities for full technical training and for specializing in forestry problems of the Northeast. Eight-weeks' camp course required of all Seniors in Forestry, in practical logging operations, on Indian Township, Washington County, Maine, under faculty supervision.

For catalog and further information address

FORESTRY DEPARTMENT,
University of Maine
ORONO, MAINE

DEDICATE MEMORIAL TO R. T. FISHER

On June 9, beneath a cluster of ancient white pine, hemlock and hardwood—a most appropriate setting—President James B. Conant, of Harvard University, assisted in the dedication of a bronze memorial tablet to the late Dean R. T. Fisher, of the Harvard Forest School. The ceremony was held on the Tom Swamp Tract of the Harvard Forest at Petersham, Massachusetts, a lovely woodsy spot where Dean Fisher often retreated to study and to photograph the interesting wildlife in the game sanctuary of which this area is a part.

RICHARD THORNTON FISHER
1876 – 1934
SAGACIOUS STUDENT OF NATURE
UNDERSTANDING TEACHER OF MEN
STAUNCH IDEALIST AND SYMPATHETIC FRIEND
DIRECTOR OF THE HARVARD FOREST
FOR ITS FIRST TWENTY-SEVEN YEARS
HE TAUGHT US THE ART OF FORESTRY
IN HARMONIOUS RELATION WITH NATURE
PLACED BY HIS STUDENTS
ON A SPOT HE GREATLY LOVED
1935

John S. Ames, president of the Forest School Alumni Association, and donor of the lands making up the Harvard Forest, presided, and in a brief address told how the tract was obtained and how it had become the oldest managed forest in the United States. He further mentioned how justly proud Dean Fisher was of its growth and of the increasing number of visits made by technical foresters from various portions of the world.

Henry H. Tryon, director of the Black Rock Forest, at Cornwall-on-Hudson, New York, and chairman of the Fisher Memorial Committee, spoke briefly of the unanimous admiration and loyal affection which the alumni held for their former director.

President Conant, before lifting the simple spray of spruce and larch which covered the tablet, touched perhaps the true dedicatory note:—"Dean Fisher was the real creator of this Forest. His untimely death prevented the completion of many well-laid plans that he had in the making. His death will even more closely unite the Forest with Harvard University. Dean Fisher was continually laying plans for the advancement of this wonderful work; it was only a short time before his sudden death that he discussed with me at some length the future of the work here. These plans now rest with us to carry out. On behalf of the Governing Board of Harvard University I accept this memorial with a full sense of the responsibility which is implied therein, and with a renewed gratitude for Dean Fisher's outstanding work."

C.C.C. ON WAY TO FULL STRENGTH

Expansion of the Civilian Conservation Corps to a new peak strength of 600,000 men began in all sections of the country on June 15. Robert Fechner, director of Emergency Conservation Work, announced that a survey had disclosed it would be necessary to enroll a total of 328,570 young men and war veterans to bring the enrolled strength of the camps to the 600,000-man figure. Of the 328,570 new men, a total of 247,000 will represent outright additions to the Corps made necessary through President Roosevelt's expansion program, while 81,570 will be replacements for enrollees who have dropped out of the Corps in recent months.

Of the total number of new enrollees 298,806 will be juniors and 29,764 will be war veterans. When the Corps is at peak strength 545,000 of the enrollees will be juniors and 55,000 war veterans.

Selection of the new expansion and replacement quotas is now under way in all sections of the country. The Labor Department has sent out letters of instruction to all state directors of selection advising them as to the number of men to be selected in each state. The Veterans' Administration has forwarded instructions, including the new veterans' expansion quota. Regulations governing the new enrollment stipulate that all new enrollees must be taken from families on relief rolls.

Under the expansion program, work is being given primarily to young men between the ages of eighteen and twenty-eight who are citizens of the United States, unmarried and unemployed who wish to allot a substantial portion of their $30 monthly cash allowance for the assistance of their needy and dependent families.

The number of new men to be selected in each state to bring the C.C.C. up to full strength under the expansion program is as follows: Alabama, 7,177; Arizona, 959; Arkansas, 5,734; California, 7,447; Colorado, 2,121; Connecticut, 3,630; Delaware, 512; District of Columbia, 1,560; Florida, 7,483; Georgia, 7,868; Idaho, 914; Illinois, 20,840; Indiana, 8,150; Iowa, 2,775; Kansas, 4,740; Kentucky, 7,730; Louisiana, 4,391; Maine, 1,903; Maryland, 3,496; Massachusetts 13,306; Michigan, 17,990; Minnesota, 4,420; Mississippi, 5,693; Missouri, 10,414; Montana, 1,205; Nebraska, 2,088; Nevada, 435; New Hampshire, 1,095; New Jersey, 10,922; New Mexico, 976; New York, 34,853; North Carolina, 5,975; North Dakota, 1,663; Ohio, 22,500; Oklahoma, 9,522; Oregon, 1,442; Pennsylvania, 33,116; Rhode Island, 1,462; South Carolina, 6,297; South Dakota, 1,340; Tennessee, 6,178; Texas, 15,201; Utah, 797; Vermont, 893; Virginia, 3,415; Washington, 2,042; West Virginia, 6,775; Wisconsin, 6,695, and Wyoming, 430.

Forestry Questions Submitted to The American Forestry Association, 1713 K St., N. W., Washington, D. C., will be Answered in this Column. . . . . A Self-Addressed Stamped Envelope Accompanying Your Letter will Assure a Reply.

✣ ✣ ✣

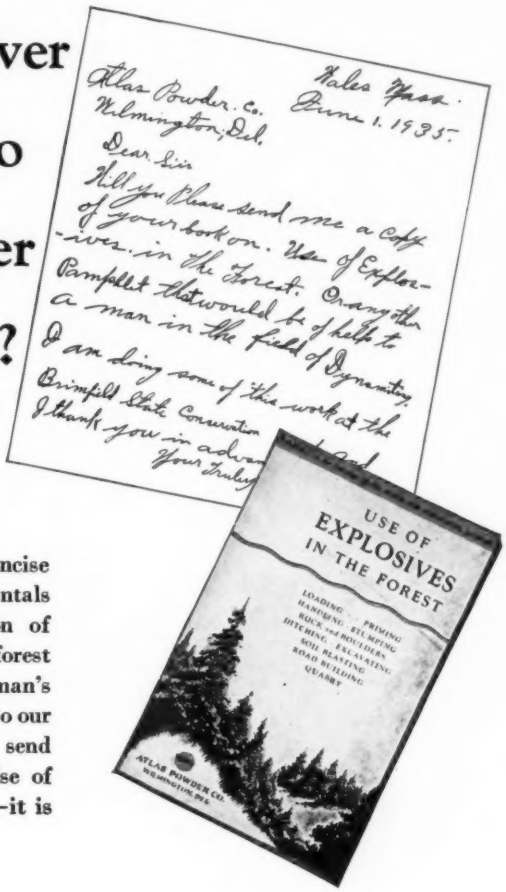
QUESTION: In driving some 2,000 miles in Georgia and neighboring states much turpentining has been observed. The gashing or tapping commencing within a foot or two of the ground occasionally goes as high as approximately twelve feet. What effect does this cutting have on the life of the tree? Can the tree afterwards be used for timber? Is the strength of the timber affected?—L. E. M., Georgia.

ANSWER: Gashing for turpentine reduces the life of the tree but of more importance is the weakening from fire which frequently follows the injury from "facing." The tree can be used for timber after it has been turpentined but that portion adjacent to the "face" is not only weaker but much heavier as a result of the accumulation of rosin in the cells of the wood. Some firms cutting this type of tree place the fresh lumber from the butt logs of turpentine trees in a special kiln to extract the rosin and turpentine.

QUESTION: I have several small white pines and plan on putting in some gooseberry and currant bushes. I understand that these plants are carriers of white pine blister rust. If so I will not plant same. What effect will these plants have on my pines?—E. M. W., Wisconsin.

ANSWER: If you have white pine trees which you prize and desire to see develop you should not plant gooseberry or currant bushes within a thousand feet of them. In fact, the planting of such bushes in a white pine region should be discouraged under any circumstances because sooner or later they are likely to become infected with the alternate host stage of white pine blister rust and to save the white pines the bushes will have to be destroyed.

Have You Ever Wanted to Write a Letter Like This?


Wales Mass.
June 1. 1935.
Atlas Powder Co.
Wilmington, Del.
Dear Sir
Will you please send me a copy
of your book on. Use of Explos-
-ives in the Forest. Or any other
Pamphlet that would be of help to
a man in the field of Dynamiting.
I am doing some of this work at the
Brimfield State Convention
I thank you in advance
Yours Truly
USE OF EXPLOSIVES IN THE FOREST
LOADING — PRIMING
HANDLING — STEMMING
BOULDER and BOULDERING
DITCHING — EXCAVATING
SOIL BLASTING
ROAD BUILDING
QUARRY
ATLAS POWDER CO.

IF YOU want a simple, concise summary of the fundamentals of the practical application of explosives to all types of forest work (written from the layman's point of view), drop a card to our nearest office and we will send you the Atlas booklet "Use of Explosives in the Forest"—it is yours for the asking.

ATLAS POWDER COMPANY, WILMINGTON, DEL.

Cable Address—Atpowco

Everything for Blasting

OFFICES

Allentown, Pa.	Joplin, Mo.	New Orleans, La.	Pittsburgh, Pa.	Spokane, Wash.
Boston, Mass.	Kansas City, Mo.	New York, N. Y.	Portland, Oregon	St. Louis, Mo.
Butte, Mont.	Knoxville, Tenn.	Philadelphia, Pa.	Salt Lake City, Utah	Tamaqua, Pa.
Denver, Colo.	Los Angeles, Calif.	Picher, Okla.	San Francisco, Calif.	Wilkes-Barre, Pa.
Houghton, Mich.	Memphis, Tenn.	Pittsburg, Kansas	Seattle, Wash.	

ATLAS EXPLOSIVES

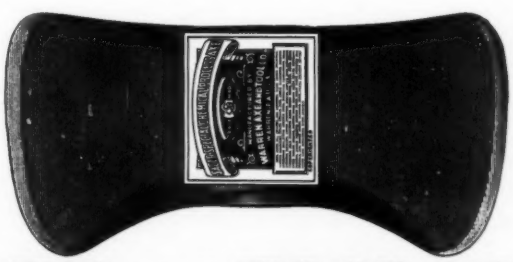
SINGLE & DOUBLE BIT

AXES

ALL PATTERNS

✦

HIGHEST QUALITY FOR THE LAST HALF CENTURY



ALL KINDS OF

LOGGING TOOLS

CHAIN HOOKS, SWIVELS, COLD SHUTS & EVERY TOOL KNOWN FOR LOGGING. ALSO PULASKI MULTI-USE TOOLS

WARREN AXE AND TOOL CO., Warren, Pa.

famous
FOR
THEIR RAZOR-SHARP EDGES

● Remington-du Pont sheath knives and sheaths make professional outdoor men and experienced Boy Scouts sit up and take notice. They're all ready for service—hard, severe service that would ruin ordinary sheath knives.

But these knives can take almost anything, because their blades are forged of special steel; they hold a razor-sharp edge; and the handles and sheaths are rugged and sturdy.

See them at your nearest dealer's, or write for information. Remington Arms Co., Inc., Cutlery Division, Department R-2, Bridgeport, Conn.

Remington
DU PONT

A Camera should be part of your outdoor sporting equipment. Send for our FREE BARGAIN CATALOG describing thousands of CAMERAS and SUPPLIES (Movie and Still) at LOWEST PRICES. Backed by our 35 year reputation and guaranteed. Write today!

CENTRAL CAMERA CO. Est. 1899
Dept. P-7, 230 S. Wabash Ave., Chicago

Snake Kit

An unusually compact and complete snake kit has been placed on the market by the Herriott Laboratories, Visalia, California. This is known as their "Scout Snake Kit" and is about the size of the small boxes used for aspirin. It will fit into a vest pocket or a small watch pocket and is so small and compact it may be carried on outdoor outings without the least bit of difficulty.

The kit contains two small vials of the necessary medicines as well as a vial containing a sterilized lancet for treating the wound, also a bandage, together with a little booklet telling just what to do if bitten by a snake and how to treat the wound.

Shrinkproof Wood

Wood that does not warp or shrink—completely sealed with waxes that resist the ravages of moisture—may be science's answer to demands of wood users for a more perfect working material. A new process for achieving greater permanence in this way has been developed by Dr. A. J. Stamm, chemist of the Forest Products Laboratory.

If successfully applied on a commercial scale, according to the Forest Service, the new process opens up possibilities of finer craftsmanship in wood and better service to the user than have yet been attained. Sporting goods such as tennis rackets and golf clubs would be free from the hazards of warping; parquetry floors would take on a new life, smoothness, and permanent polish; cabinets, panels, and table tops would stay for years in "new" condition—all the while preserving a natural finish to reveal the beauty of the wood grain.

A thoroughgoing treatment, such as this process affords, gives far better insurance against future seepage of moisture into the cell walls of wood than ordinary surface treatment with antishrink materials, Dr. Stamm points out, because the latter can be impaired by cutting, nailing, or continued wear.

Dr. Stamm's process makes use of an intermediary or transfer solvent. Green wood whose natural water content keeps the submicroscopic membrane spaces wide open, can be used, thus eliminating the necessity for seasoning. "Cellosolve," the intermediary substance, is injected into the wood by a replacement process, dissolving into and replacing the water, which because it boils at a lower temperature than does cellosolve, is distilled off.

Impregnated with cellosolve, the wood is next placed in a melted wax bath, and the replacement process is repeated, with the wax dissolving into and replacing the cellosolve, which is in turn distilled off. Beeswax and stearin are two of the waxes successfully used in the process, but such substances as rosin and linseed oil can also be used with waxes in many combinations.

An important feature of the new process is the fact that the green wood, when filled with waxes, very nearly retains its natural size even through wide changes in the moisture of the surrounding air. There is no initial damage such as often occurs when green wood is dried, so that loss of wood from checking, bowing, twisting, and the like is largely eliminated.

Dry Method of Fire Extinguishment

Everyone interested in fire prevention, fire control and forest fire fighting will be interested to learn that the Garrison Engineering Corporation has perfected and is now manufacturing a new three pound appliance known as the "Garfire Gun".

The gun uses the same Garrison DuGas dry compound as used in the larger Garrison units — portable engines and motor apparatus — which have proved effective in subduing the most hazardous of fires both indoors and out. The significant feature of the gun is that it adds mobility to extinguishment and speed to effectiveness. The gun is so light that it can be carried quickly to any desired point. It is simple to operate, a most important factor in subduing fires.

New Self-Priming Centrifugal Pump

A new bantam-weight self-priming centrifugal pump, powered with a two and a half horse power engine and rated at 8,500 gallons per hour capacity, has been announced by the Jaeger Machine Company, Columbus, Ohio. Weight saving has been accomplished by compactness of design and the use of aluminum and alloy steel construction, producing a rugged, powerful outfit which is also portable enough to be picked up with one hand, carried anywhere and set to work. It is offered for general utility service. Priming action is completely automatic, without hand levers or adjustments. Repriming is also automatic.

All Steel Hand Hoist

One of the Civilian Conservation Corps Camps at Ardmore, Oklahoma, has had an opportunity to experiment with steel hand hoists used on a special stone setting derrick. On this project three small streams are being closed by an earthern dam, 155 feet high. When completed this will form a large lake of about 10,000 acres in area which will eventually be stocked with many species of fish. The new type hoist, manufactured by Beebe Brothers, Seattle, Washington, is being used in the construction of small bridges made of native stone. The problem of lifting these heavy stones both in quarrying and in placing them has been satisfactorily solved by this type of hoist. C. C. C. Camps have also found it exceedingly helpful in pulling stumps, clearing fallen timber, and in many other incidental jobs where compact size, light weight and unusual strength are needed.

Further information concerning any of the above products will be supplied in your self addressed stamped envelope mailed to American Forests, 1711 K Street, N. W., Washington, D. C.

Colorado Association Celebrates Anniversary

The fiftieth anniversary of the Colorado Forestry Association, which was organized in 1885, was observed at Denver on May 17, at a banquet which brought together leading foresters and conservationists of the Rocky Mountains.

Greeted by Governor Edwin C. Johnson, of Colorado, the gathering heard addresses from Professor H. H. Chapman, of the Yale Forest School, and president of the Society of American Foresters, Allen S. Peck, regional forester, United States Forest Service, Will R. Murphy, of the Colorado State Land Board, and others.

Professor Chapman as the principal speaker reviewed the history of forestry and praised the association for its part in developing its advancement in the Rocky Mountains. He urged the necessity of keeping the forestry profession free from the spoils system in the management of public resources, and emphasized the need and place of non-partisan public service organizations in the nation's conservation program now being undertaken.

A. Lincoln Fellows, of Denver, reviewed the activities of the association more than thirty years ago when it was influential in extending the National Forest system to the western mountains.

Meeting with the Colorado Forestry Association was the Central Rocky Mountain Section of the Society of American Foresters.

New York Opens Conservation Celebration

Gifford Pinchot, first Chief Forester of the United States, and former governor of Pennsylvania; Henry S. Graves, president of The American Forestry Association, and dean of the Yale Forest School, who served as second Chief Forester of the nation; Rexford G. Tugwell, Under-secretary of Agriculture; and Robert Moses, chairman of the Long Island Park Commission, were the principal speakers at the banquet at Albany on May 15 opening the celebration of the fiftieth anniversary of conservation in New York State.

Mr. Pinchot reviewed the accomplishments of forestry and conservation for the past fifty years; Mr. Graves gave an historical review of the situation that preceded the creation of the New York State Forest Preserve, leading up to the constitutional amendment of 1894 that forbade the cutting of trees in the state park and then praised the idea of expanding the development of forests outside the preserve as a means of demonstrating the benefits that would result to "local industrial and community life" from applied forestry.

"The present law that permits utilization of timber on state land in the Forest Preserve counties outside the park boundaries and the policy of establishment of state forests in other portions of the State will give an opportunity to demonstrate the service of forestry as an essential feature in land use and in aiding to build up rural industrial life," he said.

Mr. Tugwell called for a new militancy on the part of conservationists as he sounded an allegorical warning of "rural slums" that would reduce productive United States to a level of ages-old China. In the national interest, he said, the rural poor must be helped to attain new standards of decent living for themselves and their families. That is the direction conservation should take, he declared. Mr. Moses told of the value of the development of state parks in various sections of the State.

Oklahoma Launches Quail Plan

The Oklahoma Game and Fish Commission has launched an intensive quail restoration program which will assure better cover and food conditions for the bobwhites of that State. This program calls for a farm-to-farm canvas by competent committees selected for the purpose, to secure pledges for planting feed patches and maintaining quail cover.

Various Oklahoma municipalities are cooperating with the commission. For example, last year the City of Tulsa raised 481,000 game fish at its municipal fish hatchery. These fish, consisting of bass, crappies and bream, were placed in Lake Spavinaw, the city reservoir, and Mohawk Park lagoons, in all of which angling is permitted by the public.

Georgia Association Opposes Transfer of Forest Service

The fourteenth annual meeting of the Georgia Forestry Association recently held at Macon, favored keeping the United States Forest Service in the Department of Agriculture and opposed Senate Bill 2665, insofar as it renders possible the transfer of the Forest Service to the proposed Department of Conservation and Works.

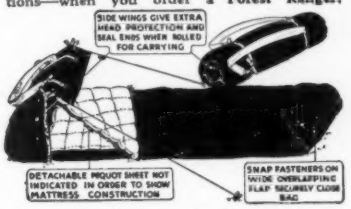
Establishment of the Civilian Conservation Corps as a permanent government activity was endorsed, and expansion of its activities on privately owned lands was urged.

Organized forest fire prevention was the keynote of the convention, one of the greatest in the history of the Association.

T. G. Woolford, of Atlanta, was reelected president of the Association; W. T. Anderson, of Macon, Dean Paul W. Chapman, of Athens, and James Fowler, of Soperton, were elected vice-presidents. Joseph A. McCord, of Atlanta, was elected treasurer.

30,000 FOREST RANGERS Can't Be Wrong!

You can ask for no better recommendation for our sleeping bag than the fact that during the past three years the U. S. Forest Service has purchased over 30,000 Forest Ranger Sleeping Bags from us. You get this same sleeping bag—up to U. S. F. S. specifications—when you order a Forest Ranger.


SIDE WINGS GIVE EXTRA HEAD PROTECTION AND SEAL ENDS WHEN ROLLED FOR CARRYING
DETACHABLE MOUOT SHEET NOT INDICATED IN ORDER TO SHOW MATTRESS CONSTRUCTION
SNAP FASTENERS ON WIDE OVERLAPPING FLAP SECURELY CLOSE BAG

America's Most Popular Sleeping Bag!

There are more Forest Rangers in regular use in the U. S. than any other make of sleeping bag. Only because we standardize on one model, buying best materials in large quantities and saving on manufacturing, can we offer this quality sleeping bag at these low prices. A light-weight, quality sleeping bag that has stood all tests—the Forest Ranger is superior to any other sleeping bag in its price class.

With shoulder carrying straps **$15** $14 without straps

FOREST RANGER SLEEPING BAGS

SEATTLE TENT & AWNING CO., Seattle, Wn.

Please send me descriptive folder "C"

Name_____

Address_____

Dealer's Name_____

YOU MUST SEE CLEARLY . . .

OUR forests need the protection of trained foresters — and foresters need the help that fine binoculars can give them. To distinguish between smoke and a dust cloud, to spot a smoldering lightning fire before it gets under way, for systematic examination of areas of known high fire risk, you need a binocular that will give you a sharp image even at great distances. Bausch & Lomb Binoculars are made to give sharp detail, a wide field, brilliant illumination even in dark weather, and long dependable service.

De Luxe 40-page Catalog, free on request; shows models for all uses.

6 x 30 Binocular $72

BAUSCH & LOMB OPTICAL COMPANY

136 Lomb Park - - - Rochester, N. Y.

A REMARKABLE PREVENTIVE, which, taken internally, by drops, "vaccinates" for an entire season. Used by the 9th Army Medical Corps in C. C. C. camps and by power companies for line crews. Immunization should begin at least two weeks before possible exposure.

▶In mild cases POISONOK will materially shorten duration of rash. In severe cases see your physician for injection and adjunctive treatment.

POISONIVI

for Poison Ivy, also available at the same price and is just as effective.

$1.00 U. S. Govt. Lic. No. 8

At all drug stores on the Pacific Coast.. or order direct postpaid east of Rockies

Literature on request—

CUTTER LABORATORIES

4th and Parker Sts., Berkeley, Calif.
or Midland Bldg., West Adams Street, Chicago

Manufacturers of Vaccines and Antitoxins for the medical profession since 1897

TREES pruned easily

Reforestation Projects Should Include BARTLETT EQUIPMENT

Compound Lever Tree Pruners, Pole Saws, Cross Cut Saws and Tree Surgeons' Supplies

Write for free illustrated catalog showing Complete line.

BARTLETT MANUFACTURING CO.
3019 E. Grand Blvd. Detroit, Michigan

PARKS & RECREATION

Official Magazine of the
American Institute of Park Executives
and
American Association of Zoological Parks and Aquariums

●

Keeps you in touch with the phenomenal trends and developments of the National, State and local park and recreation movements.

All men in park work should have it.

●

Subscription $3.00 Per Year

For further information write

Parks & Recreation

625 Sexton Bldg., Minneapolis, Minn.

Book Reviews

THE THEORY AND PRACTICE OF SILVICULTURE, by F. S. Baker. Published by McGraw-Hill Book Company, Inc., New York City. 502 pages. Price $5.00.

Silviculture, which is defined as the art and science of growing and reproducing stands of timber on a basis of permanency, is discussed on a broad scientific basis by F. S. Baker in "The Theory and Practice of Silviculture."

The book is prepared primarily for forestry students and attempts to prepare them for the practice of silviculture in the woods with information dealing with "(1) Fundamental plant physiology, through which we learn the basic reactions of trees to the factors that influence their development; (2) forest ecology, by which we learn the broader reactions of the forest to whole groups of factors; (3) silvicultural systems, which give the experience of others in practical silviculture in other regions; (4) the forest itself, which yields much information to the careful and systematic observer; and (5) the literature of silviculture which is rapidly preserving the results of observations and studies all over the country."

Professor Baker has assembled and digested a wealth of information hitherto available only in Government bulletins, reports and scientific papers. It is indexed in a way to be easily available and is supported by an extensive bibliography.—G. H. C.

HOMES AND HABITATS OF WILD ANIMALS, by Karl Patterson Schmidt. Published by M. A. Donahue & Company, New York City. Price $1.50. 64 pages, illustrated.

Instead of discussing numbers of animals as a group because of their hereditary relationship, Mr. Schmidt makes their common denominator some similar habit or characteristic. For instance, one chapter deals with the animals that change their coats in winter and another deals with those who fish for their food. Under these headings he gives brief descriptions of the characteristic or habit itself as well as of several animals included in the group. His language is simple and clear and this combined with the excellent full page colored illustrations makes "Homes and Habitats of Wild Animals" a desirable book for children as well as adults.—R. S. R.

NATURE CHATS—A YEAR OUT-OF-DOORS, by John Harvey Furbay. The Science Press Printing Company, Lancaster, Pennsylvania. 255 pages, illustrated. Price $1.75.

In this chronicle of Nature's year, the author proves that there is constantly something fresh and invigorating about the woods and fields and streams. Thoreau wrote: "The faces of the fields comfort me, when I'm tired of the faces of men." In fifty-two essays, one for each week of the year, the author paints Nature at work, and it is a fascinating picture down to the smallest detail. It reveals that life is not the confused, disordered thing it seems but that all phases are integrated in one great plan—each takes its place; and that a near knowledge of these integers leads to calm and peace of mind.

There is an extensive appendix with outlines for practical Nature study, and the book is an excellent guide for teachers as well as students of the out-of-doors.—L. M. C.

AMONG THE CURRENT PUBLICATIONS

THE PRIMITIVE PERSISTS IN BIRD LIFE OF YELLOWSTONE PARK, by George M. Wright, and A WILDERNESS-USE TECHNIQUE, by Ben H. Thompson. These are two articles on wildlife preservation published by the Cooper Ornithological Club.

STUDIES IN FORESTRY RESOURCES IN FLORIDA. III. THE NAVAL STORES INDUSTRY, by A. Stuart Campbell is an economic study of the naval stores industry published by the University of Florida.

ORNAMENTAL TREES FOR NEW YORK STATE, by R. W. Curtis and Donald Wyman, is a bulletin published by the New York State College of Agriculture, Ithaca, New York, for the benefit of the New York home owner giving suggestions and information on the selection of the best type of trees for planting on his own grounds.

NATURE'S PLAN, published by the Regional Planning Federation, Philadelphia Tri-State District, Philadelphia, is a description and discussion of a proposed comprehensive system of parks, parkways and recreational lands throughout the Philadelphia Tri-State District.

THE IDENTIFICATION OF THE COMMERCIAL TIMBERS OF THE PUNJAB, by K. Ahmad Chowdhury, Forest Research Institute, Dehra Dun, India. This bulletin undertakes to show the differences of the anatomical structure of some of the more common commercial timbers of the Punjab.

SOME DISEASES OF OREGON FISH AND GAME AND IDENTIFICATIONS OF PARTS OF GAME ANIMALS, Station Bulletin 322, published by Oregon State Agricultural College, Corvallis.

POPLARS, PRINCIPAL TREE WILLOWS AND WALNUTS OF THE ROCKY MOUNTAIN REGION, by George B. Sudworth. Technical Bulletin No. 420. Obtainable from Department of Agriculture, Washington, D. C. Descriptions of the characteristics of these trees accompanied by illustrations and maps showing distribution.

A PRELIMINARY SURVEY OF THE FOOD OF OREGON TROUT, Station Bulletin 323. Obtainable from Oregon State Agricultural College. The results of the study of fish conservation problems through adequate feeding and disease control.

WOODLAND CARRYING CAPACITIES AND GRAZING INJURY STUDIES, Bulletin No. 391, and REDUCE WOODLAND GRAZING BY INCREASING PASTURES, Station Note No. 12, obtainable from United States Department of Agriculture, Washington, D. C. These two bulletins discuss the major cause of farmwood deterioration in the Central States; namely—overgrazing by livestock.

METHODS OF TESTING THE SUSCEPTIBILITY OF TIMBERS TO TERMITE ATTACK (Part VII, Volume XX in "Indian Forest Records"), by Cedric Dover and R. N. Mathur, Delhi, India.

FLOODS AND ACCELERATED EROSION IN NORTHERN UTAH, U. S. Department of Agriculture Miscellaneous Publication No. 196. By Reed W. Bailey, C. L. Forsling, and R. J. Becraft. Obtainable from Superintendent of Documents, Washington, D. C. Price 5 cents. The one essential in any attempt to halt damage done by floods and erosion in the determination of the degree of abnormalcy of accelerated run-off and erosion and their causes. The recent floods in northern Utah present an unusual opportunity for just such an analysis, the results of which are presented in this little pamphlet.

Famous Game Census Dog Dies

Max Berry, the first dog to distinguish himself as an important adjunct to game management, is dead.

Max, an 11-year old Gordon setter, started his game census work in 1928 with Professor H. M. Wight, of the School of Forestry and Conservation, University of Michigan. (An account of Professor Wight's work with Max Berry appeared in the October, 1930, issue of AMERICAN FORESTS.) Between that time and 1934 he covered approximately 125,000 acres, and participated in handling approximately 7,500 birds. Before coming to Michigan he had traveled over twenty-three states with his master.

Professor Wight says, "Max knew from experience the peculiar odor of sixteen different upland game birds, but in Michigan he became highly specialized on pheasants. He demonstrated the probability of individual scent characteristics in birds by refusing to show more than a friendly interest towards liberated birds with which he had previously become a pal. I am convinced that the game census will eventually become just as important in game management as timber cruising is to forestry now. I am satisfied hundreds of dogs can be trained readily to do reliable census work."

Max located his birds by body scent. Having been trained to head off young pheasants, he almost never trailed a cock bird from the rear. These traits made it possible for him to handle dozens of pheasants while the average dog was locating one. This made it possible for Professor Wight to census a pheasant cover accurately. His best record was made in company with his young son Max, the two dogs successfully handling 125 birds for accurate checking in two hours.

Max was a dog with diversified interests. One moment an attentive family dog, the next he became a fast, wide-ranging bird dog with endurance. He quickly won a place in the hearts of the neighbors, and led hundreds of school children safely across a dangerous city street.

"Duckports" Latest Idea to Save Wildfowl

Wildfowl restorationists today are taking a leaf from aviation's book of experience in a move to put more web-footed flyers on the migratory airways.

A great chain of voluntarily created "duckports" or refuges, already linking up more than a hundred landing places for wild ducks from Canada to the Gulf of Mexico, is rapidly taking form, according to the More Game Birds Foundation, directing the unique plan.

Following nationwide appeals by state fish and game officials and national conservation organizations, sportsmen, farmers, bird lovers, park officials and groups of all types have been enlisted in the waterfowl refuge movement. Up to May 1, seventeen of the projects had been started in New York and eleven each in Wisconsin and Connecticut. Minnesota, Michigan and Nebraska had six each under way and twenty-four other states had five or less.

Voluntary establishment of the refuges on suitable areas of three acres of water or more everywhere is sought. Pond and marsh owners, or anyone securing use of any area for refuge purposes, may enter a free National Waterfowl Refuge Contest. Over $500 in cash and scores of other awards are to be made for the most helpful sites set aside.

Jay N. Darling, Chief of the United States Bureau of Biological Survey, heads a national committee supervising the contest.

Iowa Merges Conservation Work

Iowa has consolidated its conservation interests into a Department of Conservation, amalgamating the former State Board of Conservation and the State Fish and Game Commission.

The new Commission consists of seven members, the chairman being Mrs. Henry Frankel, who has had years of experience on the Board of Conservation. Mrs. Frankel is the first women in America to head a commission which will direct the affairs of the sportsmen of any state or province. Two members were appointed for two years, three for four years, and two for six years. The new Commission will select its own directing personnel.

Under a new Iowa "license law," separate licenses are available for hunting and fishing at a dollar each, with a combination for $1.50, which it is predicted will produce about $300,000 annually for game and fish work. Appropriations for other activities of the new department are approximately $350,000, or the total available revenue for the combined set-up will be about $650,000 annually.

New Primitive Area in Montana

A thirty-mile range in the rugged Cabinet Mountains of northwestern Montana has been designated by the Forest Service as a Primitive Area, dedicated to inspirational and recreational use of the public.

This area, a part of the Cabinet and Kootenai National Forests, is one of outstanding wilderness character and scenic grandeur. It has so far been visited by relatively few people, although a National Forest road now leads within a mile of it. It is the plan of the Forest Service to maintain it in its primitive state for enjoyment by nature lovers and those hikers, riders and campers who wish to explore and find recreation under wilderness conditions.

The tract will be known as the Cabinet Mountains Primitive Area. Most of the timber in the area is of sub-alpine type, and the rugged terrain makes excellent summer range for wild game, including black and grizzly bear, deer, elk, mountain sheep and goats.

PETER McLAREN
America's Champion Chopper

A PLUMB bites deep

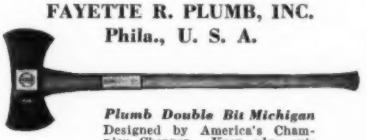
DEEP into the cut a Plumb blade bites—day in and day out—without constant grinding. Plumb heat-steel does that!

Out comes the blade, without tugging and pulling. The tapered blade does that . . . rolls the chip and prevents sticking.

Champion choppers, like Peter McLaren, use Plumb Axes for speed. Foresters and woodsmen use them because they stand up.

There is a Plumb for every need, from small belt axes to husky double bit axes for felling forest giants.

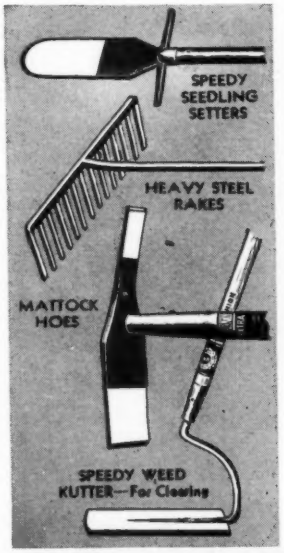
FAYETTE R. PLUMB, INC.
Phila., U. S. A.



Plumb Double Bit Michigan
Designed by America's Champion Chopper. Keen edge cuts for a long time without grinding. Fan-shaped blade gives clearance. Weight centered for balance.

GOODSELL COTTAGE
LAKE PLACID, N. Y.
Ideal Location—Refined Atmosphere
Home Cooking $18 per week up
B. S. GOODSELL

Special Purpose TOOLS for Foresters



Non-burnable steel shank rakes, heavy mattock and grading hoes, high speed weed cutters and seedling setters, and more than 70 other improved Heavy Duty Forged Tools and Repair Handles for forestry and public work are shown in this special new catalog. Gives valuable suggestions to any man in charge of workers and job equipment. Our tools are sold by leading jobbers everywhere. Mail coupon for your copy of catalog, today.

THE UNION FORK & HOE CO.
Dept. AF-7, Columbus, Ohio
Send Catalog No. 2 of heavy duty Forks, Rakes, Hoes, Handles and other tools having special application to forestry or public work.
Name.....
Address.....

READY!
WITH THE
New Regulation
U. S. Forest Service
Field Clothes

For the Regular U. S. Forest Service Personnel.

Expertly tailored of the SPECIFIED MATERIALS (Finest quality all-wool).

Correct fit and satisfaction guaranteed.

Also Regulation Field Clothes for C.C.C. Supervisory Personnel—Made-to-Measure and Ready-Made.

Write for descriptive folders, sample fabrics and prices. No Obligation!

The Fechheimer Bros. Co.
Uniforms for over 47 Years
Cincinnati Ohio

Idaho
School of Forestry
University of Idaho
Moscow, Idaho

Offers thorough training in practical forestry, preparing for Federal, State and private work.

Four and five year courses, leading to the degrees of Bachelor of Science in Forestry and Master of Science in Forestry respectively.

Opportunity is given to specialize in general forestry, wood utilization and range management

Large logging and milling operations, important wood-working industries and extensive Federal, State and private forests are near at hand. Excellent opportunity for summer employment.

Catalog Free.

A FOREST SAVED
IS A FOREST RAISED

Conservation Calendar in Congress

Published monthly while Congress is in session as a service to the members of The American Forestry Association. This calendar contains bills introduced in the First Session of the Seventy-fourth Congress between May 15 and June 15, as well as any action taken on bills previously listed.

BILLS APPROVED

H. R. 6718—SANDLIN—Appropriations for the Department of Agriculture. Passed House March 15. Passed Senate May 10. Approved May 17. Public Law No. 62.

S. 1680—MCNARY—Including within Deschutes National Forest, Oregon, certain public lands. Passed Senate March 29. Passed House May 20. Approved May 28. Public Law No. 68.

S. 462—MCNARY—Extension of exchange authority and addition of public lands to Willamette National Forest in Oregon. Passed Senate January 31. Passed House amended in lieu of H. R. 1418 June 3. Senate concurred in House amendment June 5.

S. 654—THOMAS—Exchange of lands reserved for Seminole Indians in Florida. Passed Senate March 29. Passed House June 3.

S. 1513—MCNARY—Adding certain lands to Siskiyou National Forest in Oregon. Passed Senate March 29. Passed House June 3 in lieu of H. R. 7164.

H. H. 6954—BREWSTER—Transferring Green Lake Fish Cultural Station, Maine, to Acadia National Park. Passed House May 20. Passed Senate May 22. Approved May 29. Public Law No. 85.

S. 82—GEORGE—For the disposal of surplus personal property of the Emergency Conservation Work. Passed Senate March 29. Passed House in lieu of H. R. 60 May 20. Approved May 29. Public Law No. 82.

H. R. 3285—CULKIN—Preliminary examination of Oswego, Oneida, Seneca and Clyde Rivers in New York for flood control. Passed House May 20. Passed Senate May 28. Approved June 5. Public Law No. 102.

NATIONAL FORESTS

S. 2649—HAYDEN—Providing for recreation area within Prescott National Forest, Arizona. Report 744. Passed Senate June 10.

H. R. 5282—LLOYD—Extending provisions of Forest Exchange Act to lands adjacent to Mt. Baker National Forest. Report 876 May 13.

H. R. 3061—SAMUEL B. HILL—For the adjustment of Chelan National Forest in Washington. Report 873 May 13.

NATIONAL PARKS

S. 2848—BONE—Establishing Whitman National Park in Washington. To Public Lands and Surveys May 16.

H. R. 7929—DEROUEN—Authorizing Secretary of Interior to accept donations of land, interests in land, buildings, or other property for the extension of National Parks, National Monuments, and other areas administered by the National Park Service. To Public Lands May 7.

S. 2972—CAREY—Extending the boundaries of the Grand Teton National Park and creating Jackson's Hole National Game Refuge in Wyoming. To Public Lands and Surveys June 3.

S. 2074—BYRD—(H. R. 6734—MAVERICK)—To create a National Park Trust Fund Board. Passed House June 3. Passed Senate June 10.

H. R. 6373—THOMASON (S. 2131—CONNALLY AND SHEPPARD)—Establishing Big Bend National Park. Report 878 May 13.

H. R. 6465—DEROUEN—To accept the cession by Arkansas of jurisdiction over all lands included within the Hot Springs National Park. Passed House June 3.

MISCELLANEOUS

H. R. 3019—DEROUEN—Amending the Taylor Grazing Act of June 28, 1934. Passed House May 23.

H. R. 7982—KLEBERG—Amending the Migratory Bird Hunting Stamp Act of March 16, 1934, and certain other acts relating to game and other wildlife administered by the Department of Agriculture. Passed House June 5. Passed Senate in lieu of S. 3006 June 10.

S. 2825—COPELAND—Establishing a National Planning Board and organization and function. To Commerce May 14.

H. R. 8117—DEROUEN (S. 2863—WAGNER)—Providing a measure of damages for timber trespass upon lands of United States. To Public Lands May 17.

S. J. Res. 127—THOMAS of Oklahoma—Providing funds for protection of land resources against soil erosion. To Agriculture and Forestry May 13.

S. 1811—GEORGE (H. R. 8171—DEAN)—Publication of statistics relating to spirits of turpentine and rosin. Passed Senate May 20.

H. R. 6914—FULMER (S. 2739—COPELAND)—Acquisition of State Forests. Passed House May 22.

S. 738—WAGNER (H. R. 6594—ROBINSON)—Aiding in providing the people of the United States with adequate facilities for park, parkway and recreational areas. Report 610 May 13.

H. R. 8271—LUCKEY—Amending the act of May 22, 1928, relating to conservation and use of timber and other forest products. Introduced May 29.

H. R. 8212—KENNEY—Appropriations for eradication and control of tent caterpillar. To Agriculture May 24.

S. J. Res. 142—NORBECK—Providing for continuance of wildlife restoration program and other conservation projects. Report 837 June 7.

S. 3011—BURKE (H. R. 8271—LUCKEY)—Amending act to insure adequate supplies of timber and other forest products, to promote full use for timber growing and other purposes of forest lands, etc. To Agriculture and Forestry June 6.

FORESTRY IN CONGRESS

By G. H. COLLINGWOOD

Authority for the Federal Government to cooperate with the states in the acquisition of land suitable for forestry purposes, the land to be administered and developed by the states, will be given if the Fulmer Bill, H. R. 6914, which passed the House on May 22, is voted favorably by the Senate. The companion bill is S. 2739, introduced by Senator Royal S. Copeland, of New York.

Secretary Ickes' proposal to change the name of the Department of the Interior to the Department of Conservation and Works, as sponsored in the house by Representative John J. Cochran, of Missouri, in H. R. 7712, was considered on June 4, in a hearing before the Committee on Expenditures in Executive Departments. After receiving testimony from Secretary Ickes and Administrative Assistant Ebert K. Burlew, of the Department of the Interior, and Chief Forester F. A. Silcox, who represented the Secretary of Agriculture, the Committee adjourned to resume the hearings at the call of the acting chairman, Representative Allard H. Gasque, of South Carolina.

Shorn of most of its power, the National Recovery Act is assured continuance until April 1, 1936, by passage of S. J. Res. 113.

By passage of S. 82, camp property and other equipment used by the Civilian Conservation Corps and abandoned when the camp has moved to another location, can now be turned over to the state for forestry or recreational purposes or can be given to public educational agencies.

Six million dollars is allotted for the purchase and restoration of land for wildlife and migratory water-fowl refuges in Senator Peter Norbeck's amendment to H. R. 7982, approved by the President June 16. The money will be drawn from the unexpended balance of the $3,300,000,000 appropriated on June 16, 1933, for emergency purposes, and will be in addition to a provision in the bill authorizing allocations from the $4,800,000,000 Work-Relief act on April 8, for carrying on the Government's program of wildlife restoration, rehabilitation and protection. In other sections of the bill the migratory bird hunting stamp act of March 16, 1934, is amended to simplify the purchase of "Duck Stamps"; the Lacy Act of 1900 is amended to give Federal game wardens greater authority and to more effectively stop commerce in illegally killed game; the administration of lands acquired for Migratory Bird Refuges is clarified; payment is authorized to the states of twenty-five per cent of revenues that may be derived from wildlife refuges and reservations administered by the Department of Agriculture; and the National Park Service is given jurisdiction of several thousand acres in the Wind Cave National Game Refuge.

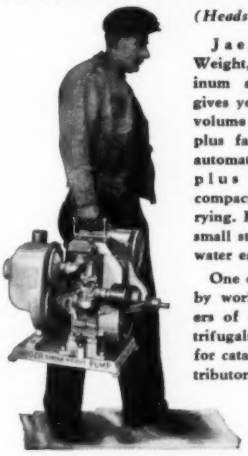
A National Park Trust Fund Board to accept and administer gifts for the benefit of the National Park System and to build up a "National Park Trust Fund" will be created by passage of H. R. 6734. The act will enable the National Park Service to make use of funds which would be placed at their disposal after the manner of other funds available to the Congressional Library. It is a companion to H. R. 6670 and S. 2073, providing for the preservation of historic American sites, and the Board will administer any gifts or bequests of personal property made for them.

Senator Carey, of Wyoming, has introduced a new draft of the bill to add lands to the Grand Teton National Park, in Wyoming. This bill is less inclusive than S. 3705, as introduced by him in the Seventy-third Congress, and proposes to bound Jackson Lake reservoir with National Park land only on the southern and western shores, leaving the eastern side, together with Two Ocean and Emma Matilda Lakes in the Teton National Forest. The boundaries include about 30,000 acres now in the Teton National Forest, and 20,000 acres in the Public Domain. A wildlife refuge of about 20,000 acres, located south of the Gros Ventre River and adjoining the extension of the park, would be administered by the Biological Survey. Another section of the bill declares that no portion shall become effective until the Federal Government has made satisfactory compensation to Teton County for the loss of taxes, which would have resulted had the lands remained in private ownership. In addition, perpetual grazing rights are given to ranchers of Teton County, and title to a 240-acre homestead is to be given one Albert W. Gabbey, of Jenny Lake.

The Taylor Grazing Act may be amended under H. R. 3019, passed by the House on May 23, to permit grazing districts to be established on the entire unappropriated Public Domain of 165,695,479 acres, rather than to be confined to 80,000,000 acres as stated in the act. The state committees appointed by the Grazing Administration are reported to have proposed the creation of grazing districts embracing a total of 142,640,000 acres.

150 GALLONS per Minute—with this Portable Automatic Priming Pump—

(Heads up to 60 ft.)



Jaeger "Bantam Weight," built of Aluminum and Alloy Steel, gives you the huge water volume of a centrifugal, plus fast, 100 per cent automatic self-priming, plus light weight and compactness for easy carrying. Passes mud, sand, small stones, pumps dirty water easily.

One of a complete line by world's largest makers of self-priming centrifugals. Write today for catalog, prices. Distributors in every city.

THE JAEGER MACHINE COMPANY
525 Dublin Avenue Columbus, Ohio

Please Mention
AMERICAN FORESTS
WHEN WRITING ADVERTISERS

INVESTIGATE *the* ADVANTAGES *of the* INDIAN

Forest AND BRUSH Fire Pump

Uses Only Clear Water

Manufactured by

D. B. SMITH & CO., 405 Main St., Utica, N. Y.

Pacific Coast Agents

Hercules Equip. & Rubber Co.
11 Mission St., San Francisco, Cal.

Pacific Marine Supply Co.
1217 Western Ave., Seattle, Wash.

Western Loggers' Machinery Co.
302 S. W. 4th St., Portland, Oregon

One Pound

Ulmus pumila Seed

(Chinese Elm)

Only $2.50

Write for Free

GENERAL TREE AND SHRUB

SEED CATALOGUE

with Cultural Notes

HERBST BROTHERS, INC.

Wholesale Tree Seed Specialists

Office and Warehouse 92 Warren Street New York, N. Y.

Classified Ads

Advertisements from reputable individuals and concerns will be inserted under this head at the rate of 10c a word per insertion, cash with order. Display rates on application. No advertisement will be inserted for less than $1.00. Abbreviations, initials and letters will be counted as words. Name and address must be given, as advertisements will not be inserted in this section with only a box number. Address all orders to Classified Advertising Department, AMERICAN FORESTS Magazine, 1713 K Street, N. W., Washington, D. C.

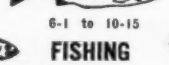
Patents

PATENTS—Reasonable terms. Book and advice free. L. F. Randolph, Dept. 586, Washington. D. C.

Wanted

FORESTER to supervise small forest reservation and timber operations located in this section. Steady position. E. A. Florang, Burlington Basket Co., Burlington, Iowa.

Sea Trout Blues 4-25 to 11-25



Sportsmen Families Home Comforts

6-1 to 10-15

FISHING

Hotel Wachapreague

Wachapreague, E. S., Va. (ocean side) via Del-Mar-Va express or concrete. Good eats. Perfectly ventilated rooms. 36 connecting baths. Good boats with cabins, toilets, awnings, chairs. Fishing tackle, all kinds (sale or hire). Rain suits complete. Booklets.

A. H. G. Mears (Ownership Management).

ASSOCIATION PLAYING CARDS

$1.50 PER SET OF 2 DECKS

✦ ✦

Send your order today

✦ ✦

THE AMERICAN FORESTRY ASSOCIATION

1713 K Street, Northwest

Washington, D. C.

SAPLING SAM'S COLUMN

Trees (?)

(Apologies to Joyce Kilmer)

I must confess that I can't see
Why poets rave about the tree.

They call its roots "its hungry mouth"
(I wish they'd try to dig 'em out).

Those "leafy arms that lift to pray,"
(I've cut 'em day by weary day).

Of course, there's "nests of robins there,"
(But who wants robins in their hair?)

They "live with rain," but who has not,
(Who sleeps upon an Army cot?)

Yes, "poems are made by fools like me,"
(But any nut can plant a tree).

Written by a member of a Pennsylvania CCC Camp.

He's Gonna Be a Plumber

Inspector Young on the spot—Son Vernon speaking:

"Say, Dad, how many kinds of milk are there?"

"Well, there's evaporated milk, butter milk, malted milk, and—why the heck do you want to know?"

"Oh, I'm drawing a pitcher of a cow and I want to know how many spiggots to put on her."—*Forest Log.*

Less Dangerous

"Girls were harder to kiss in your day, weren't they, grandpa?"

"Mebbe, mebbe," ventured the old man. "But it wasn't so blamed dangerous. The old parlor sofa wouldn't smash into a tree about that time."

—*The Earth Mover.*

Live and Let Live

Fond mother: "Well, son, what have you been doing all afternoon?"

Tough youngster: "Shootin' craps."

Fond mother: "That must stop! Those little things have as much a right to live as you have."

The Earth Mover.

Was He a Real Sprinter?

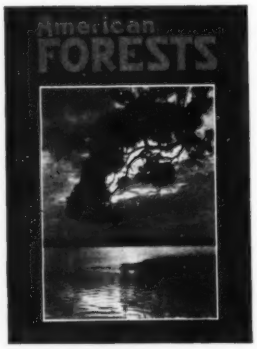
"Yes, sir," panted the new sheepherder as he tried to talk to his boss, "I got all them sheep in but I had to run pretty hard to get them lambs."

"Lambs?" replied the boss. "I have no lambs. Let's see what you got."

Looking into the shed the astonished owner saw fourteen panting jackrabbits.

—*North Dakota Merchandising Guide.*

APPLICATION FOR MEMBERSHIP In The American Forestry Association



AMERICAN FORESTS is sent monthly to Members

Date.....

The AMERICAN FORESTRY ASSOCIATION,
1713 K Street N. W., Washington, D. C.:

I hereby apply for membership in The American Forestry Association and enclose $.....

INDICATE CLASS OF MEMBERSHIP DESIRED

- ☐ Subscribing Membership, per year $4.00
- ☐ Contributing Membership, per year 10.00
- ☐ Sustaining Membership, per year 25.00
- ☐ Life Membership (no other dues for life) ... 100.00
- ☐ Patron Membership (no other dues for life) ... 1,000.00

Canadian Postage 25c extra, Foreign 50c extra, on Subscribing Memberships.

Please Letter or Type Name and Address

Name.....

Street.....

City and State.....

Business or Profession.....

July, 1935

I'VE HEARD THEM TALKING

(*Continued from page* 319)

distress on being separated from its mother.

One day late in March I was on Bull's Island, one of that romantic semi-tropical group which lies off the South Atlantic seaboard. The spring on that idyllic isle was well advanced; mockingbirds and thrushes were nesting; the yellow jasmine was tossing into the fragrant air her delicate saffron fountains of flowers. In the sheltered ponds that sleep surrounded by the dense woods of the island a great concourse of wild ducks had gathered, preparatory to their epic northward migration. On those placid waters, in their full nuptial plumage, they drifted and idled in serene unpremeditated beauty and grace. And they were talking; not alone the members of one species with their immediate fellows, but mallards, black ducks, teal, canvasbacks, widgeons—all in a quiet language were conversing, intermingling in iridescent loveliness, —now silent, now communing in the language of wild elegance.

In this primeval speech there is a total absence of the ribald, the mean, the sarcastic, the cynical, the scandalous. Here thousands of these beautiful birds had assembled; and their behavior was a kind of sacred worship. I heard no profanity. There was no afternoon-tea gossip, no bridge-table scandal. There was a gentle communion of spirit as well as of voices,—a harmony of hearts.

Now, if it seems childish for me to contrast man's speech with that of the wild creatures, remember that, fully conscious of my own shortcomings, I am merely trying to show that the simpler language of nature has an absence of some of the ugly excrescences that we have added to ours; and that while it might be a difficult, yet it would be a beautiful, thing if our communications could have in them more elemental cleanliness, courage, kindliness, and unfeigned joy.

Would not life be improved if more voices would affectionately call to us, "Are you there?" and if we would, in the same comradely spirit, answer, "I'm here, and all's well!"?

UNIQUE NATURE TRAILS

(*Continued from page* 321)

moth is demonstrated in an infested red pine plantation. To illustrate the difficulties that exist in trying to clean up an insect infestation, six sets of artificial but very real looking gypsy-moth egg-clusters are hidden in marked natural places, and interested visitors are invited to try to find them.

Many of the plots are devoted to the demonstration of silvicultural practices, such as thinning, liberation, reproduction, sanitation cuttings, and pruning. A small reproduction cutting has been made in an old pine stand just off the "forestry" trail. One plot is used entirely to show the methods employed by the Forest Service in making boundary cuttings and setting up the boundary corners. A fire line crosses the trail at one place, which not only shows how it is constructed, but also serves the purpose for which it was made.

A forest-products plot, still embryonic, has created much interest. It shows the various products which can be obtained from a Connecticut woodlot. A cord of white oak is stacked against a white oak tree, while another cord of mixed woods is labeled, describing each variety of wood, with its fuel value also indicated. Most visitors are made aware for the first time that a cord of well seasoned wood is equal in fuel value to a ton of coal. There are also three other piles of cordwood which illustrate the different grades of wood for fireplace, stove and furnace. A log sawed into different widths and thicknesses and then put together again—bark, slabs and all—is set up with the boards staggered so that visitors can see what comes out of a log. A hand-riving machine for the making of shingles is on exhibition. Telephone poles and railroad ties are being prepared for display, and a charcoal pit is in the process of construction. Plans are also being completed for the installation of a small creosoting plant.

The "forestry" trail ends not far beyond the products plot, where the Indian Lookout overlooks the Cloud Meadow, 750 feet below. From this scenic point visitors enjoy watching the great blue herons and the kingfishers busying themselves up and down the ribbon-like Farmington River, and exclaim over the beauty of the surrounding hills which pile up in rounded green heaps against the sky. The deep forest of one of the nearer hills is broken by a gracefully curved clearing, and here, the nature guide explains, the State is planning to construct a public toboggan slide. Below, at the foot of the Jessie Gerard Trail, is the old Indian burying ground, enclosed by a stockade, where all the plants which the Indians loved have been transplanted.

The number of people visiting the People's Forest has so increased that dozens of new sites for over-night campers are being added.

At the Shade Swamp Sanctuary, near Farmington, game birds and many wild animals captured in Connecticut's woods are on exhibition and make a special attraction, especially to children and naturalist students. The sanctuary, originally a game-farm, was opened up as a nature trail park in 1933 by the Connecticut Fish and Game Department in co-operation with the Connecticut Forest and Park Association.

In the winter of 1933 a duck pond was built and stocked with birds brought in from the wild. Blue-winged teal, wood ducks, pintails, a great blue heron, a black-crowned night hawk, a bittern and several other water birds attracted hundreds of visitors each week. The latter three birds were of special interest, for they were taken in the surrounding swamp, and people were surorised to learn that such birds existed so near their homes.

The trees and shrubs and woodland plants are labeled at Shade Swamp, as are those in the People's Forest. There are several short trails, the longest taking the hiker along the edge of the swamp where fox dens, woodchuck holes, and the drumming logs of the grouse fascinate the uninitiated. Paper birches, flowering dogwood, and the cadent song of the hermit thrush out in the swamp are but a few of the allurements of the swamp trail.

On a flat sandy plain above the swamp a great variety of game-food bushes have been planted to attract more game birds into the sheltering sanctuary. Barberry, scarlet thorn, matrimony vine, Japanese rose, chokecherry, and a host of other plants are expected to make this area a banquet hall for birds. A group of boys who have been building bird houses under the auspices of the Connecticut Nature League became interested in the plantings and labeled the different bushes so that visitors may learn what to plant around their homes to attract game and other birds.

Although this nature trail idea has been carried out to some extent in other states, the trails in the People's Forest and at Shade Swamp Sanctuary are thought to be the only trails of their type in the country.

The SPORTSMAN

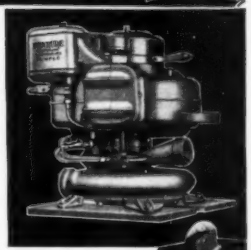
Only $55 for a genuine EVINRUDE that makes any rowboat a motor-boat! Cruise up to 7 miles an hour; discover new vacation and fishing spots; be fresh when you get there.

World's Lightest Outboard

Evinrude Sportsman weighs only 24½ lbs., is easily carried in one hand, requires little space in auto or Pullman. Newest streamline Hooded Power design. Gallon of fuel lasts over 2 hours. Complete with Underwater Silencing, Automatic Tilt-Up, Flexo-Rubber Steering, and other advanced features. Catalog shows complete line. Write today, EVINRUDE, 4398 N. 27th Street, Milwaukee, Wis.

SEND FOR FREE CATALOG

EVINRUDE



High capacity with high pressure . . . up to 154 gallons per minute, up to 150 pounds Pressure.

FIRE FIGHTING

ONLY 65 LBS. $295.

Write today for complete performance tables and specifications on this newest-type, smooth-running, four-cyclinder EVINRUDE Fire Fighter. Develops 9.2 H. P. at 4000 R.P.M. Sand and other foreign substances handled without wear by simple, non-friction centrifugal pump of exclusive Evinrude design. Write EVINRUDE Division, Outboard Motors Corp., 4393 N. 27th St., Milwaukee, Wis.

EVINRUDE CENTRIFUGAL HIGH PRESSURE PUMPER

SLEEPING PRETTY!

Big campers, as well as little ones, rest with greatest comfort on "AIRO"—the air mattress with the famous tufted cells. Gives full resilience without that trembling wobble. Low pressure, easy to inflate. Made of live rubber, khaki covered. Moderately priced. Lasts for years. Ideal for use in trailers. We also manufacture cushions for autos, boats, camps and homes and the lowest priced tubular air mattress on the market. Write today for free booklet.

The K & W RUBBER CORP.
Dept. AF-7 Delaware, Ohio

AIRO MATTRESS

OCEAN Rhythm
Father Neptune, playing a symphony with the rhythmic, pounding surf, gives new zest to ocean bathing here. Soft, glistening sand for a pillow—a warm Virginia sun—and a lullaby of the waves, makes the Beach Club seem like Utopia—and takes away one's cares.
Delicious cold luncheons served on the water's edge, and tea and supper dancing, complete the picture of this private club. These privileges are for members and hotel guests only.
Golf, riding, tennis and other sports are available at this famous resort.
Special weekly rates during July. Write Room 107, Cavalier Hotel, for full information and booklet.
Sidney Banks, Mgr. Dir
The CAVALIER
HOTEL and BEACH CLUB
Virginia Beach, Va.

Subscribe Now to Happy Days

624 PAGES FOR $1.00

That's what you get—24 pages each week for 26 weeks—when you order a six months' subscription to *Happy Days*, authorized weekly publication of the Civilian Conservation Corps.

If you're interested in forestry, in conservation, in erosion control—and in the activities and achievements of 600,000 men working in the national parks and forests—you'll enjoy every issue of *Happy Days*.

Send For Sample Copies Free

HAPPY DAYS

Daily News Building **Washington, D. C.**

DRUGS FROM THE FOREST

(*Continued from page* 324)

would we be justified in forgetting the anti-asthmatic alkaloid, *ephedrine*, obtained from the ancient Chinese plant *ma huang*, and found quite recently in the leaves of the yew trees of Scotland. Ephedrine has cleared the nasal passages of so many American citizens, and is so closely related to adrenalin, the powerful agent of the suprarenal glands, that it merits more than this fleeting notice.

In our opinion, however—and this opinion may well be disputed, the Asiatic *Chaulmoogra* oil deserves the Nobel Prize. It yields the one highly effective remedy against leprosy. This oil is produced within the seeds of a number of trees, chief among which are the *Taraktogenos Kurzii* and two of the *Hydnocarpus* species. Like so many of the natural drugs, it was used—and none too efficiently—since time immemorial. Only during the past thirty-five years was its action against the *bacillus leprae* systematically studied. When treated with caustic soda, the brownish-yellow viscous oil forms an interesting soap, from which the chemists isolated chaulmoogric acid, the active foe of the dreaded bacillus. It was Dr. Roger Adams, an American chemist, who determined the chemical composition of the doughty acid, and thus led the way to the possible synthesis of new "lepracides."

Chaulmoogra-yielding trees grow well in Puerto Rico, which houses a group of lepers at Trujillo Alto. Seeds from the East Indies and Siam have been introduced there by the Bureau of Plant Industry, and seedlings shipped in by airplane, and planted by the Forest Service, have prospered in the very heart of the leper colony. When we consider that leprosy, at present, is not confined to Africa and the Far East; that it is prevalent in certain countries of Europe; that it has worried the French Academy of Medicine, and that it is found within the borders of the United States, the importance of chaulmoogric acid and its synthetic relatives cannot be minimized. Chaulmoogra oil has done for the poor leper what quinine did for the rich Countess of Chinchon.

Just a closing word as to the present status of those time-honored drugs, more especially the alkaloids, that found their origin in field and forest. From what has already been said, it is evident that some of them have lost their prestige; that their usefulness is in the twilight zone, eclipsed by younger and less dangerous rivals. This is certainly true of cocaine. On the other hand, the significance of these remarkable old-timers, some of which, like ephedrine, date back thousands of years, should not be lightly forgotten. Methods of isolating them from their homes in bark, fruit, leaf, root, and wood intrigued the chemists of the early 19th century. Then came the fascinating game of discovering just how their potent molecules were chemically constructed. This challenged the wit of an army of laboratory workers. Following this came a series of studies in which the scientist strove to improve upon nature. Very cautiously he modified the characters of those molecules, by introducing certain desirable qualities and by eliminating some very undesirable ones. These activities marked the rise of chemotherapy, the science of devising specific compounds of high purity and of known constitution to fight against specific germs. Its slogan was: "Kill the germ but spare the patient." The father of chemotherapy in Germany was Paul Ehrlich. In America its leading protagonists were Walter Jacobs and Michael Heidelberger—men of infinite perseverance and remarkable ability. An enor-

mous amount has been accomplished by these and other scientists in synthesizing new drugs. But it is well to remember that very often the natural drugs themselves have served as beacons, signposts and blazes along the trail. True, many of them have now been displaced. A number of them are in disrepute. Some of them, cleansed and purified, have reappeared in new garb. However, not a few of them remain unchanged, powerfully active, and these, like the rugged old veteran, quinine, still hold the fort against all comers.

"Dowsing" in Ancient China

Further interesting light is thrown on the much-discussed question, "To dowse or not to dowse"—in a letter recently received from Ernest Gonzenback, author of the article, "New Light on Old Tree Mysteries," published in the April number of AMERICAN FORESTS. Commenting on an illustration used in the article, Mr. Gonzenback writes:

"That is a most interesting and unique manner of illustrating the article from my pen which appears in the current issue. But, since you say in your caption that the picture out of Münster's *Cosmographia Universalis* is the oldest known picture of a 'dowser', may I submit a correction?

"The Münster picture was printed in A.D. 1550. It may surprise you, if not shock you, that there is a much older picture of a 'dowser' extant today. It is that of the Chinese Emperor Kwang Hsü who lived about 4000 years ago! The picture shows him with a divining rod, a forked twig, in his hand. His renown and success with the mystic rod have lived through the ages and his memory is still revered by the Chinese for the use he made for the country's good of the rod's ability to locate water and treasure.

"There is a rather interesting Chinese angle to this divining rod mystery. It may not prove anything, but it throws an interesting sidelight on the subject, which is particularly appropriate at the moment, since you have practically invited it.

"As is well known, in China outside of the great cities, no one will build a house or locate a grave without first consulting a sooth-sayer, medicine man, or whatever we call him. These men, with elaborate ceremonies, investigate the proposed building site, or grave site, for the presence of 'bad demons'. But when you analyze all the hocus-pocus they go through, at the bottom one will always find a divining rod. If the twig bends, the ground is peopled by 'bad demons' and is not a suitable building site. What the matter has to do with graves is not so well known, but even there we have modern examples of the effect of strong earth rays on dead bodies. When 'bad demons', in other words earth rays, are found, the prospective builder or mourner hunts himself another location until one is found that is free from the presence of the 'demons'.

"Now for the practical effect. Much of von Pohl's theory concerns the influence of earth rays in causing cancer among humans. It may not have any meaning, but it is curious that the highest cancer rate in the world is found in Switzerland, with about 125 cases per 100,000 inhabitants. From that it ranges downward in the various countries until it reaches a low in Hungary with about forty-five cases per 100,000. But in China, with its crowded conditions and absence of scientific medical attention, the rate is about fifteen per 100,000!

"It may be only an accident, but does the avoidance of houses built in locations exposed to earth rays, have any effect? I leave it to the reader to answer."

Announcing—

CONSERVATION

A Digest for the Conservationist

Published bi-monthly by

THE AMERICAN FORESTRY ASSOCIATION

Conservation of natural resources is in the public mind today as never before. Magazines and newspapers all over the country are reflecting ideas, plans and conclusions as developed by the conservation leaders of the world.

The average person engaged or interested in the conservation of natural resources has neither the time nor means of keeping in touch with this national forum of thought, much as he or she may desire to do so.

Believing, therefore, that a real service will be rendered by making the more important articles appearing from month to month available in condensed form, The American Forestry Association is pioneering in the publication of a conservation digest. The first issue of this new publication, CONSERVATION, is now available. It will be issued every two months hereafter.

CONSERVATION is edited by Ovid Butler, who is also Editor of "American Forests", assisted by a group of associates composed of leaders in the various fields of conservation.

Read the Best About Conservation in
CONSERVATION!

Priced for Everybody—
10 Cents an Issue, 50 Cents a Year

Immediate orders beginning with the June issue.

THE AMERICAN FORESTRY ASSOCIATION
1713 K STREET, NORTHWEST
WASHINGTON, D. C.

NURSERIES

Trees for Forest Planting
PINE • SPRUCE
Firs, Arborvitaes and Other Conifers. We raise all our trees in our own nurseries.
KEENE FORESTRY ASSOCIATES
KEENE, NEW HAMPSHIRE

EVERGREENS, Deciduous Trees and Flowering Shrubs
(Quality considered) in Large Quantities can be purchased from us More Reasonably than anywhere else. Write for list and prices.
KELSEY NURSERY SERVICE
(Established 1878)
50 Church Street New York City

EVERGREEN TREES
FOR FOREST PLANTING
CERTIFIED White Pine, free from blister rust. Norway and White Spruce, Scotch and Red Pine and other varieties. Know our reasonable prices. Get our figures on Contract Planting.
WESTERN MAINE FOREST NURSERY
Dept. A-75, Fryeburg, Maine

One Pound
Ulmus pumila Seed
(*Chinese Elm*)
Only $2.50
Write for Free
GENERAL TREE AND SHRUB
SEED CATALOGUE
with Cultural Notes
HERBST BROTHERS, INC.
Wholesale Tree Seed Specialists
Office and Warehouse 92 Warren Street New York, N. Y.

TREE SUPPLIES
Tabor's Tree-wound Dressings
for Treatment of Tree Injuries.
Tree bracing rod, nuts and washers.
Cabling and guying materials.
For listings, write
Rollin H. Tabor, Mt. Vernon, Ohio

ARE THE COLUMBIA RIVER SALMON DOOMED?

(*Continued from page* 309)

for a considerable part of the year. Below Bonneville there is only one large tributary of the Columbia, the Willamette River. A fine run of Chinook salmon enters this every year, and some reach the spawning grounds in spite of numerous difficulties, which are increasing yearly.

For example, about eighteen miles above the mouth of the Willamette is the Falls of the Willamette, which has been developed for the production of power used in the mills on each bank of the river. A fish ladder, consisting of ascending series of small pools at one side of the falls is provided for the passage of the salmon. During most of the period of the salmon run, no water comes over the face of the falls, all being required by the mills except the small flow which comes down the fish ladder. During this period the salmon do not ascend the fish ladder, but hang around in the swift water which pours out of the tail races of the mills half a mile below the falls. It is only by shutting down the water supply to the mills periodically that the salmon can be directed to the fish ladder. The experience here shows how greatly salmon are directed by the current of the river in their migration.

But most of the salmon races of the Columbia spawn above the location of the Bonneville Dam.

The Rock Island Dam has two fish ladders which the salmon do ascend, but they are considered to be insufficient, and another is planned. To just what extent the salmon migration is stopped by this dam has not yet been determined.

No provision is being made for the passage of fish at the Grand Coulee Dam. Its construction therefore means the immediate extermination of salmon and steelhead trout in the streams and lakes of the Columbia basin in northeastern Washington and British Columbia.

More effort is being exerted in the planning of fishways, and more money is being expended for their construction in connection with the Bonneville Dam than any other. The great volume of the river, its swift current, the tremendous summer floods, together with the magnitude of the dam itself, produce engineering problems of unprecedented magnitude and complexity. There has been no opportunity to test experimentally the various devices which it has been necessary to design for the passing of the salmon. Nevertheless the scientists and the engineering staff who have been responsible for the design of the fishways have done splendid work in the face of most discouraging conditions. At the present moment the plans for the dam include construction of four fish ladders, and two elevators.

In the Bonneville project the spillway dam and the power dam are separated by an island of considerable size. A fish ladder is located at each end of the spillway and at one end of the power dam. At the other end of the power dam a passage leads into the ship lock, and to one of the fish elevators. Another fish ladder leads up from a creek which empties into the Columbia several hundred feet below the dam.

The fish ladders are from sixteen to thirty feet wide, and consist of a series of pools separated by elevations of a foot. Through these water will flow from the lake above the dam. As fish ladders go, these are extremely good ones. The great question is, will the salmon use them?

With one exception, the lower ends of the fish ladders are close to the ends of the dams. Water will be rushing out through the spillway gates or through the tunnels of the turbines with far greater velocity than it will flow down the fish ladders. The volume of water flowing through the largest of the ladders will be one-thousandth of the volume of the river. Salmon are guided in their ascent of streams by the strength of the currents, and by the temperature of the water. In the summer months water passing down the fish ladders should be noticeably warmer than that which will pour out of the bottom of the spillway gates. Under these conditions a serious question exists as to whether the salmon will locate the entrances to the comparatively puny streams of the fish ladders, or stay in the swift water of mid-channel until they die from exhaustion. In the case of the power dam construction it has been possible to build a conduit across the lower face of the dam, in which it is planned to maintain a transverse flow of water which the salmon may follow to the entrance of the fish ladder. Here again, the conditions which exist in the water at such a place are not well known, and still less is known as to how they will affect fish.

In the beginning of its operation only two power units will be installed at the dam. These will require for their operation only a small part of the flow of the river. But when all the units are installed the entire volume of the Columbia will flow through them during at least five months of the year. This will leave the main channel of the river below the spillway dam, out of which two fish ladders rise, as a quiet, currentless pool, into which salmon will not swim. If the salmon survive until that time, their chances for further reproduction will be greatly decreased.

The fish elevators which will be installed at the ends of the two dams are ingenious devices intended to trap the fish and then raise them to the top of the dam and dump them over. These structures are wholly experimental, not having been tested under conditions which resemble those at Bonneville. However, the lack of an inducement to enter them appears greater than in the case of the fish ladders.

Another hazard to the survival of the salmon caused by the Bonneville Dam will exist in the lake which will be formed above the dam. The current in the lake will probably be sufficient to direct the adult fish to its upper end; but the very limited areas which now exist where food for small fish is produced will be submerged, and few others will be formed. A period of years must elapse before the lake area will acquire a stable biological balance. The chances are that the slow passage of young fish through a long stretch of river which is poor in food will have a serious effect upon their survival.

The turbines of the power plant will present another serious risk to the salmon. It seems inevitable that a very large number of the young fish, as well as the mature steelheads which are returning to the sea after spawning, will be drawn through the turbines. The type of turbine designed for the Bonneville power plant gives small fish a better chance to pass through uninjured than other types. But beneath the turbines the escaping water contains numerous small "vacuum pockets" which experiments prove to possess considerable destructive powers. So far as salmon are concerned, only fish from one to eight inches long will be going down stream, and these may pass the turbines safely. But there can be no chance of a mature steelhead getting through the turbines alive. And for even a part of the returning steelheads to be destroyed in this

way will have an effect upon the fishing in all the streams above the dam.

In considering the relation of the Columbia River dams to the fisheries of the river some comparison should be made of the values which the dams are expected to develop with the values the fisheries already possess.

The Bonneville Dam is expected to be an element in the development of the transportation of freight from east of the Cascade Mountains by river, with a consequent saving in freight rates, and to develop electric power which can be sold at a cheap price. Conservative estimates indicate that the saving in freight costs will be about $200,000 a year for the first twenty-five years after the dam is completed, and that it may increase to $300,000 a year during the second twenty-five year period.

Estimates of a responsible character are lacking as to the income from power. The region already has unusually cheap hydro-electric power, and an average surplus of about fifty per cent. For the power from Bonneville Dam either new uses must be developed, or it must replace the power which is already in use.

Economic justification of the Grand Coulee Dam is even more difficult. There appears to be little present or future demand for power which might be developed by it. Apparently the idea of power development has been abandoned, and an attempt will be made to build a high dam for the purpose of irrigation. But what crops can be grown in that region which will be sufficiently profitable to justify the costs of irrigation?

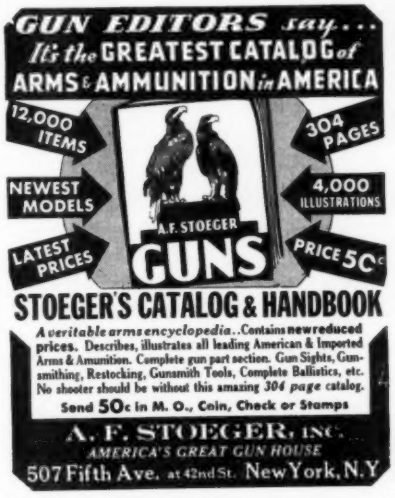
The value of the fisheries is already established. It consists of three factors:—the value of the salmon taken by commercial fisheries; the value of salmon, including steelhead trout, in sport or recreational fishing; and the value of the salmon incubated in the Columbia to the marine fisheries along the Pacific Coast.

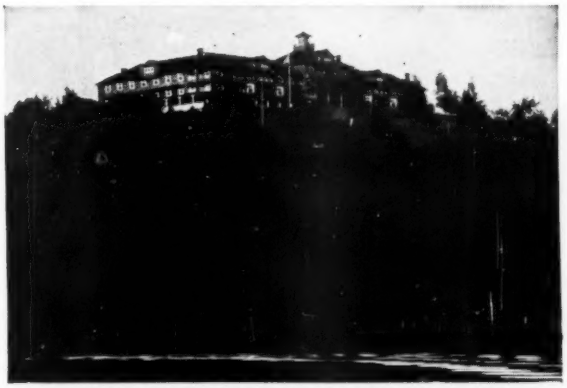
In 1929, the value of the commercial catch of salmon in the Columbia River district was $9,431,000. The number of persons directly employed in making and handling this catch was 6,270. Their wages amounted to $1,485,325. In addition, a large amount of salmon is caught and sold which is not included in these figures. The total value of the commercial fisheries of the district must exceed $10,000,000, annually.

The value of sport fishing is a difficult thing to determine. It is based, not so much on the value of the fish caught, as upon what is spent in "going fishing." Recreational fishing trips cover the entire area of the Columbia River basin in Oregon, Washington, and Idaho. The sport fishing of the Columbia basin has been estimated to have an annual value of $10,000,000, which includes trout fishing. Such an estimate may be much too high, or not high enough, but common knowledge of the number of persons who fish for recreation, the number of camps and boats which are maintained for these fishermen, and the amount of money spent for fishing tackle and outfits, is evidence enough that the total monetary value of sport fishing to the community is large indeed. It seems probable that $5,000,000 annually is a conservative estimate of the value of the sport fishing for salmon and steelhead in the Columbia basin.

The third factor, the value of the Columbia River as a hatchery and incubator for the marine fisheries, is one to which little attention seems to have been given. After young Chinook and silver salmon leave the river they migrate north and south for great distances along the Pacific Coast. During their wanderings, and especially when they are returning to their natal streams, they are caught in great numbers by trollers, purse seiners and traps. The results of tagging experiments have shown that, as far north as Sitka, Alaska, a large part of the fish taken by trolling come from the Columbia. It is not unreasonable to believe that as many of the Columbia River races of salmon are caught at sea as are caught in the river itself. If so, the value of the Columbia salmon caught at sea would be about $10,000,000 annually, as has been estimated by various authorities. If the production of salmon in the Columbia is affected by the dams, the trolling fisheries from Monterey to Alaska will likewise be affected.

If the annual income of the fisheries of the Columbia is set at $15,000,000, and this sum capitalized at five per cent, an investment of $300,000,000 would be needed to bring this annual return. If the Columbia River district had, as the result of planning and management, secured an investment of this amount in any manufacturing industry, there is nothing the leaders of the district would not do to make the investment secure and permanent. But, such is human nature, when a resource of that magnitude is supplied by the bounty of nature, its existence is scarcely recognized, and the means taken to preserve it are tardy, inadequate, and penurious.

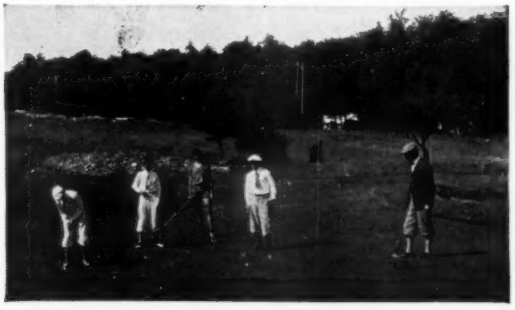

GUN EDITORS say...
It's the GREATEST CATALOG of
ARMS & AMMUNITION in AMERICA
12,000 ITEMS
304 PAGES
NEWEST MODELS
4,000 ILLUSTRATIONS
LATEST PRICES
PRICE 50c
A.F. STOEGER
GUNS
STOEGER'S CATALOG & HANDBOOK
A veritable arms encyclopedia..Contains new reduced prices. Describes, illustrates all leading American & Imported Arms & Amunition. Complete gun part section. Gun Sights, Gunsmithing, Restocking, Gunsmith Tools, Complete Ballistics, etc. No shooter should be without this amazing 304 page catalog.
Send 50c in M. O., Coin, Check or Stamps
A. F. STOEGER, INC.
AMERICA'S GREAT GUN HOUSE
507 Fifth Ave. at 42nd St. New York, N.Y



THE CRESTMONT INN
and COTTAGES
EAGLES MERE, PA.
HIGH IN THE ALLEGHENY MOUNTAINS

ENJOY the beauties of this glorious Vacation Land. "The loveliest spot in Pennsylvania." 2200 feet altitude. Crisp, exhilarating mountain breezes. Magnificent views in all directions, and a large mountain lake of exquisite loveliness. Surrounded by miles of unbroken forest; threaded with new, safe automobile drives. Eagles Mere is 160 miles northwest of Philadelphia.

TWO Golf Courses and eight championship Tennis Courts. Riding, Hiking, Bathing, Canoeing, Dancing, Music, and Game Room. Bridge Tournaments, Golf Tournaments, Tennis Tournaments, Water Sports. A famous resort hotel catering to a discriminating clientele of all ages. The finest of food, service and appointments. Thirty-sixth year under Same Family Management.



Write today for illustrated booklet and rates
THE CRESTMONT INN
EAGLES MERE, PA.
WILLIAM WOODS, Proprietor
"View of Twelve Counties"

Index to

ADVERTISERS

July, 1935

	PAGE
American Fork and Hoe Company	336
American Pad & Textile Company	338
American Telephone and Telegraph Co.	2nd Cover
Atlas Powder Company	339
Bartlett Manufacturing Co.	342
Bausch & Lomb Optical Company	341
Beebe Brothers	337
Burlington Basket Co.	346
Cavalier Hotel	348
Central Camera Company	340
Cleveland Tractor Company, The	4th Cover
Crestmont Inn, The	351
Cutter Laboratories	342
Darley & Company, W. S.	337
DuPont de Nemours & Co., Inc., E. I.	335
Fechheimer Brothers Company, The	344
Goodsell Cottage	343
Happy Days Publishing Company	348
Herbst Bros., Inc.	346-350
Idaho School of Forestry	344
Jaeger Machine Company, The	345
Keene Forestry Associates	350
Kelsey Nursery Service, F. W.	350
K. & W. Rubber Corporation	347
Maine School of Forestry	338
Mears, A. H. G.	346
Outboard Motors Corporation	347
Parks & Recreation	342
Plumb, Inc., Fayette R.	343
Randolph, L. F.	346
Remington Arms Company, Inc.	340
Seattle Tent & Awning Company	341
Smith & Co., D. B.	345
Stoeger, Inc., A. F.	351
Tabor, Rollin H.	350
Union Fork and Hoe Company	343
Warren Axe & Tool Company	339
Western Maine Forest Nursery	350

MICKIE, THE MINK

(*Continued from page* 331)

by sneaking little nips that sometimes when inflicted through silk stockings are not so little as he thinks. So leather gloves are used when we play. A mop or broom delights him beyond words, and so fierce is his attack that once he twisted a mop right out of my hand. His jaw grip is terrific for such a small animal, and he knows no fear. Like a bulldog, once with a hold, Mickie never lets go. In strategy he is no small general. Finding he cannot crawl upon you in front, past a pair of gloved hands, Mickie will slip around, climb upon a chair to reach your level, if one is handy, or will get behind you and jump on your back. And any opposition only stiffens his resolution.

Bonnell Stone Dies in Georgia

Bonnell Stone, one of the founders of the Georgia Forestry Association, and its secretary since its creation in 1921, died May 25 at his home at Oxford, Georgia. A former member of the Georgia State Legislature, Mr. Stone served for thirteen years as a private forester at Blairsville, and for a short time was associated with the United States Forest Service. He was one of the leaders in creating the Georgia Forest Service.

Virginia Pulp Mill Insists on Practice of Forestry

One ten-inch loblolly pine must be left to each quarter acre of cut-over land by those who would sell their pulpwood to the Chesapeake Corporation of West Point, Virginia. Not only must the cut-over land bear four ten-inch trees to the acre but each seed tree must have a well developed top in which new or old pine cones are present.

In making this step toward the introduction of forestry practice upon privately owned forest lands, dependent upon the Chesapeake Corporation for market, their forester, W. L. Gooch, has described these requirements as an absolute minimum and that in most instances better results will be secured by encouraging more seed trees.

Eagle Scout Awarded Medal

The William T. Hornaday Gold Medal for distinguished service to wildlife has been presented to Eagle Scoutmaster Harold K. Whitford, of Troop 472, Kips Bay Boys' Club, New York City. Mr. Whitford is distinguished by being the only member of the Boy Scouts of America ever to have received both the gold honor badge and the distinguished service gold medal awarded by Dr. Hornaday.

Receiving his award for "diligent work in securing legislation for the birds of New York and other valuable services to wildlife," Mr. Whitford for three years sought protection for the great blue heron and bittern, finally seeing legislation giving full and complete protection to these birds adopted by the State. For the past five years Mr. Whitford has directed the Scout Leaders' Wild Life Conservation Patrol, which he organized in 1930 for the New Jersey Section of the Palisades Interstate Park. As Special Game protector of the State of New York, Mr. Whitford has rendered service in minimizing the sale of native song birds.

Mr. Whitford joined the Boy Scouts in 1912 and has served in many capacities since then. In 1920 he became an Eagle Scout and shortly thereafter an assistant scoutmaster. In 1921 he became a scoutmaster.

WHO'S WHO

Among the Authors in This Issue

LAWRENCE E. GRIFFIN (*Are the Columbia River Salmon Doomed?*) is professor of biology at Reed College, Portland, Oregon. Born in Dalton, New York, he received his Ph.D. degree from Johns Hopkins University in 1900, following which he was an instructor in biology at Western Reserve University for two years, and was then made professor of biology at Missouri Valley College. From 1908 until 1913 he was associate professor of zoology at the University of the Philippines, when he left to fill a similar position at the University of Pittsburgh.

W. H. Bolles

W. H. BOLLES (*The Hour Before Dawn*) has been connected with the United States Forest Service for a number of years. At present he is located in Portland, Oregon, where as one of the technical assistants on the forest survey staff he is engaged in timber sale work.

LOUIS ELSBERG WISE (*Drugs From the Forest*) is a distinguished chemist who has specialized in the chemistry of wood products. Now professor emeritus, Dr. Wise was for many years professor of the chemistry of wood products at the New York State College of Forestry, at Syracuse.

MARY E. PASCO (*Unique Nature Trails*) is connected with the Forestry Department at the Connecticut Agriculture College, at Storrs, where she is specializing in forestry and biology.

RAYMOND A. WOHLRABE (*Light in Forest Photography*) is instructor in biological science in one of the Seattle High Schools. Travel and photography being his hobbies, his camera has accompanied him into many parts of Asia, the South Seas, South America and practically every part of North America.

ARCHIBALD RUTLEDGE (*I've Heard Them Talking*), well-known author and poet, is a frequent contributor to AMERICAN FORESTS. His articles and poems of the "low country" along the Atlantic Coast have given the American public a picture of the real, the romantic South. Mr. Rutledge is now living in Mercersburg, Pennsylvania.

LEAH F. COLLINS (*Field & Forests for Boys and Girls—"Mickie, the Marvelous Mink"*) lives in The Dalles, Oregon, where she spends a good deal of her time writing and studying animals.

W. W. CHRISTMAN (Poem—*Toward Life*—is a widely known poet who lives in Delanson, New York. ROWENA ARTHUR MILLS (Poem—*Hour of Promise*) lives in Portland, Oregon, where she finds inspiration for her many nature poems.

ERLE KAUFFMAN (*The Big Bend of the Rio*) is assistant editor of AMERICAN FORESTS. G. H. COLLINGWOOD (*Forestry in Congress*) is forester for The American Forestry Association.

The American Forestry Association

1713 K STREET, NORTHWEST

Washington, D. C.

President
HENRY S. GRAVES

Treasurer
GEORGE O. VASS

Assistant Treasurer
I. J. ROBERTS

Executive Secretary
OVID BUTLER

Forester
G. H. COLLINGWOOD

Business Manager
FRED E. HORNADAY

Vice Presidents

C. VIVIAN ANDERSON—Ohio
HARRY LEE BAKER—Florida
President, Association of State Foresters
MAJOR GEORGE L. BERRY—Tennessee
President, Central States Forestry Congress
MRS. H. G. BOGART—Colorado
Chairman Committee on Parks, Forests and Wildlife, General Federation of Women's Clubs
GEORGE H. CECIL—California
Los Angeles County Conservation Association
FRANCIS R. COPE, JR.—Pennsylvania
Pennsylvania Forestry Association
DONALD DENMAN—Washington
Crown Willamette Paper Company
NEWTON B. DRURY—California
Save-the-Redwoods League
L. E. FREUDENTHAL—New Mexico
American Farm Bureau Federation
R. B. GOODMAN—Wisconsin
Goodman Lumber Company
DR. C. D. HOWE—Canada
Department of Forestry, University of Toronto
MRS. ROY A. MAYSE—Indiana
Chairman of Conservation, D. A. R.
DR. M. G. NEALE—Idaho
President, University of Idaho
MRS. ANNA B. SCHERER—Connecticut
J. RUSSELL SMITH—New York
Columbia University
FREDERIC C. WALCOTT—Connecticut
DR. HENRY BALDWIN WARD—Illinois
American Association for the Advancement of Science
JOHN W. WATZEK—Illinois
Crossett Watzek Gates Lumber Company
MRS. WILLIAM L. WILSON—Florida
Former Chairman of Conservation, General Federation of Women's Clubs
MRS. ROBERT C. WRIGHT—Pennsylvania
Chairman, Conservation Committee, Garden Club of America

Board of Directors

F. W. BESLEY, 1935—Maryland
State Forester of Maryland
W. R. BROWN, 1939—New Hampshire
Chairman, New Hampshire Forestry Commission
C. ARTHUR BRUCE, 1935—Tennessee
Director, Hardwood Manufacturers' Institute
SAMUEL T. DANA, 1937—Michigan
School of Forestry and Conservation, University of Michigan
WILLIAM B. GREELEY, 1938—Washington
West Coast Lumbermen's Association
W. B. GREELEY, 1936—New York
Camp Fire Club of America
A. S. HOUGHTON, 1939—New York
New York State Reforestation Commission
THOMAS P. LITTLEPAGE, 1938—District of Columbia
Past President, District of Columbia Chamber of Commerce
WILLIAM S. B. McCALEB, 1936—Pennsylvania
Pennsylvania Railroad
JAMES G. K. McCLURE, JR., 1937—North Carolina
President, Farmers Federation
JOHN C. MERRIAM, 1936—Dist. of Columbia
President, Carnegie Institution of Washington
GEORGE W. SISSON, JR., 1935—New York
American Paper and Pulp Association
WILLOUGHBY G. WALLING, 1938—Illinois
WILLIAM P. WHARTON, 1937—Massachusetts
National Association of Audubon Societies

What the Association Is Working For

ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of streamflow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states, and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wildlife, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, with respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

Ready FOR AMERICA'S FORESTS

FOR YEARS CLETRACS have been at work in America's National Parks on the roughest kind of work for men and tractors. Cletracs have performed so well that the Federal Government purchased almost a thousand more this spring for use by the U. S. Forest Service. We are proud of the part Cletracs are playing in protecting, conserving and improving America's National Forests.

THE CLEVELAND TRACTOR COMPANY, Cleveland, Ohio

Cletracs ready for delivery to the Federal Government. Almost a thousand Cletracs were purchased this spring for the U. S. Forest Service.

In Santa Barbara National Forest, Cletrac differential steering gives the operator the perfect control necessary on a job like this.

CLETRAC CRAWLER TRACTORS

THE *only* CRAWLER TRACTOR WITH CONTROLLED DIFFERENTIAL STEERING

THE *only* CRAWLER TRACTOR WITH CONTROLLED DIFFERENTIAL STEERING